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新世纪高等院校英语专业本科生系列教材

总主编 戴炜栋

新编简明英语语言学教程

A NEW CONCISE COURSE ON
LINGUISTICS FOR
STUDENTS OF ENGLISH

主编 戴炜栋 何兆熊

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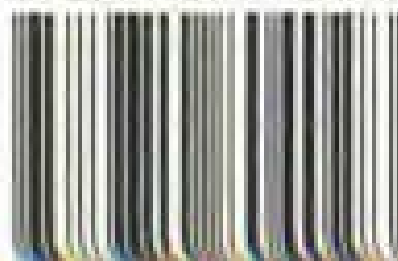
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1 INTRODUCTION

1.1 What is linguistics?

1.1.1 Definition

Linguistics is generally defined as the **scientific study of language**. It tries to answer the basic questions “What is language?” and “How does language work?” It probes into various problems related to language such as “What do all languages have in common?”, “What range of variation is found among languages?”, “What makes language change?”, “To what extent are social class differences reflected in language?”, “How does a child acquire his mother tongue?”, and many others.

Linguistics studies not any particular language, e. g. English, Chinese, Arabic, and Latin, but it studies languages in general. It is a scientific study because it is based on the systematic investigation of linguistic data, conducted with reference to some general theory of language structure. In order to discover the nature and rules of the underlying language system, what the linguist has to do first is to collect and observe language facts, which are found to display some similarities, and generalizations are made about them; then he formulates some hypotheses about the language structure. But the hypotheses thus formed have to be checked repeatedly against the observed facts to fully prove their validity. In

linguistics, as in any other discipline, data and theory stand in a dialectical complementation; that is, a theory without the support of data can hardly claim validity, and data without being explained by some theory remain a muddled mass of things.

1.1.2 The scope of linguistics

The study of language as a whole is often called **general linguistics**. This deals with the basic concepts, theories, descriptions, models and methods applicable in any linguistic study, in contrast to those branches of study which relate linguistics to the research of other areas.

Language is a complicated entity with multiple layers and facets, so it is hardly possible for the linguists to deal with it all at once. They have to concentrate on one aspect of it at a time. This has given rise to a number of relatively independent branches within the area of linguistics.

What first drew the attention of the linguists were the sounds used in languages. The study of sounds used in linguistic communication led to the establishment of **phonetics**.

Then, as linguists became interested in how sounds are put together and used to convey meaning in communication, they developed another branch of study related to sounds called **phonology**.

The sounds used in linguistic communication are represented by symbols, i. e. morphemes. The study of the way in which these symbols are arranged and combined to form words has constituted the branch of study called **morphology**.

Then the combination of words to form grammatically permissible sentences in languages is governed by rules. The study of these rules constitutes a major branch of linguistic studies called **syntax**.

But the ultimate objective of language is not just to create grammatically well-formed sentences. In most general terms language is used to convey meaning. The study of meaning is known as **semantics**.

Language communication does not occur in a vacuum, it always occurs in a context. When the study of meaning is conducted,

not in isolation, but in the context of language use, it becomes another branch of linguistic study called **pragmatics**.

The study of all these aspects of language form the core of linguistics.

Then, language is not an isolated phenomenon; it is a social activity carried out in a certain social environment by human beings. Naturally, in the course of time the study of language has established close links with other branches of social studies, resulting in some interdisciplinary branches of linguistic study.

Language and society are closely connected. The language a person uses often reveals his social background, and there exist social norms that determine the type of language to be used on a certain occasion; and language changes are often caused by social changes. The study of all these social aspects of language and its relation with society form the core of the branch called **sociolinguistics**.

Psycholinguistics relates the study of language to psychology. It aims to answer such questions as how the human mind works when we use language, how we as infants acquire our mother tongue, how we memorize, and how we process the information we receive in the course of communication.

Findings in linguistic studies can often be applied to the solution of such practical problems as the recovery of speech ability. The study of such applications is generally known as **applied linguistics**. But in a narrow sense applied linguistics refers to the application of linguistic theories and principles to language teaching, especially the teaching of foreign and second languages.

1.1.3 Some important distinctions in linguistics

1.1.3.1 Prescriptive vs. descriptive

Prescriptive and descriptive represent two different types of linguistic study. If a linguistic study aims to describe and analyze the language people actually use, it is said to be **descriptive**; if the linguistic study aims to lay down rules for "correct and standard" behaviour in using language, i.e. to tell people what they should say

and what they should not say, it is said to be **prescriptive**.

Modern linguistics is mostly descriptive. It differs from earlier studies of language normally known as “grammar” in that the latter is based on “high” (religious, literary) written language. It aims to set models for language users to follow. On the other hand, modern linguistics is supposed to be scientific and objective and its task is to describe the language people actually use, be it “correct” or not. Modern linguists believe that whatever occurs in the language people use should be described and analyzed in their investigation.

1.1.3.2 Synchronic vs. diachronic

Language exists in time and changes through time. The description of a language at some point of time in history is a **synchronic** study; the description of a language as it changes through time is a **diachronic** study. A diachronic study of language is a historical study; it studies the historical development of language over a period of time.

In modern linguistics, a synchronic approach seems to enjoy priority over a diachronic one. It is believed that unless the various states of a language in different historical periods are successfully studied, it would be difficult to describe the changes that have taken place in its historical development. Synchronic descriptions are often thought of as being descriptions of a language in its current existence, and most linguistic studies are of this type.

1.1.3.3 Speech and writing

Speech and writing are the two major media of linguistic communication. Modern linguistics regards the spoken language as the natural or the primary medium of human language for some obvious reasons. From the point of view of linguistic evolution, speech is prior to writing. The writing system of any language is always “invented” by its users to record speech when the need arises. Even in today’s world there are still many languages that can only be spoken but not written. Then in everyday communication, speech plays a greater role than writing in terms of the amount of information conveyed. And also, speech is always the way in which every

native speaker acquires his mother tongue, and writing is learned and taught later when he goes to school. For modern linguists, spoken language reveals many true features of human speech while written language is only the “revised” record of speech. Thus their data for investigation and analysis are mostly drawn from everyday speech, which they regard as authentic.

1.1.3.4 **Langue and parole**

The distinction between *langue* and *parole* was made by the Swiss linguist F. de Saussure in the early 20th century. **Langue** and **parole** are French words. *Langue* refers to the abstract linguistic system shared by all the members of a speech community, and *parole* refers to the realization of *langue* in actual use. *Langue* is the set of conventions and rules which language users all have to abide by, and *parole* is the concrete use of the conventions and the application of the rules. *Langue* is abstract; it is not the language people actually use. *Parole* is concrete; it refers to the naturally occurring language events. *Langue* is relatively stable, it does not change frequently; while *parole* varies from person to person, and from situation to situation.

Saussure made this distinction in order to single out one aspect of language for serious study. In his opinion, *parole* is simply a mass of linguistic facts, too varied and confusing for systematic investigation, and what linguists should do is to abstract *langue* from *parole*, i.e., to discover the regularities governing the actual use of language and make them the subjects of study of linguistics.

1.1.3.5 **Competence and performance**

Similar to Saussure’s distinction between *langue* and *parole* is the distinction between competence and performance, which was proposed by the American linguist N. Chomsky in the late 1950’s. Chomsky defines **competence** as the ideal user’s knowledge of the rules of his language, and **performance** the actual realization of this knowledge in linguistic communication. According to Chomsky, a speaker has internalized a set of rules about his language, this enables him to produce and understand an infinitely large number of

sentences and recognize sentences that are ungrammatical and ambiguous. Despite his perfect knowledge of his own language, a speaker can still make mistakes in actual use, e. g., slips of the tongue, and unnecessary pauses. This imperfect performance is caused by social and psychological factors such as stress, anxiety, and embarrassment. Similar to Saussure, Chomsky thinks that what linguists should study is the ideal speaker's competence, not his performance, which is too haphazard to be studied. Although a speaker possesses an internalized set of rules and applies them in actual use, he can not tell exactly what these rules are. So the task of the linguists is to discover and specify these rules.

While Saussure's distinction and Chomsky's are very similar, they differ at least in that Saussure took a sociological view of language and his notion of *langue* is a matter of social conventions, and Chomsky looks at language from a psychological point of view and to him competence is a property of the mind of each individual.

1.1.3.6 Traditional grammar and modern linguistics

It is generally believed that the beginning of modern linguistics was marked by the publication of F. de Saussure's book "Course in General Linguistics" in the early 20th century. But we have to be aware that before that language had been studied for centuries in Europe by such scholars as philosophers and grammarians. The general approach thus traditionally formed to the study of language over the years is roughly referred to as "traditional grammar." Modern linguistics differs from traditional grammar in several basic ways. Some of these have already been briefly mentioned before.

Firstly, linguistics is descriptive while traditional grammar is prescriptive. A linguist is interested in what is said, not in what he thinks ought to be said. He describes language in all its aspects, but does not prescribe rules of "correctness". He does not believe that there is some absolute standard of correctness concerning language use which linguists or school teachers should view as their duty to maintain. Instead, he would prefer to be an observer and recorder of facts, but not a judge. He might recognize that one type of

speech appears to be more socially acceptable than others because of the influence of fashion. But this will not make him think that the socially acceptable variety can replace all the other varieties, or the old words are always better than new ones or vice versa. He will regard the changes in language and language use as the result of a natural and continuous process, not something to be feared.

Second, modern linguistics regards the spoken language as primary, not the written. Traditional grammarians, on the other hand, tended to emphasize, maybe over-emphasize, the importance of the written word, partly because of its permanence. Before the invention of sound recording, it was difficult for people to deal with utterances which existed only for seconds. Then, the traditional classical education was also partly to blame. People were encouraged to imitate the "best authors" for language usage. Many of the rules of traditional grammar apply only to the written language; they cannot be made meaningful in terms of the spoken language, without much qualification and addition.

Then, modern linguistics differs from traditional grammar also in that it does not force languages into a Latin-based framework. For a long time on the European continent it was unquestionably assumed that Latin provides a universal framework into which all languages fit. As a result, other languages were forced to fit into Latin patterns and categories, especially its case system and tense divisions of past, present and future. To modern linguists, it is unthinkable to judge one language by standards of another. They are opposed to the notion that any one language can provide an adequate framework for all the others. They are trying to set up a universal framework, but that will be based on the features shared by most of the languages used by mankind.

1.2 What is language?

1.2.1 Definitions of language

If we take linguistics to be the scientific study of language, our next

question then is “What is language?”

This may at first sound like a naive and simple question. Yet to this extremely familiar, everyday phenomenon, it is difficult to give a satisfactory definition. Some people probably will say “language is a tool for human communication”. Far from a definition, this only tells us what language does, or what it is used for, i.e. its function. Alternatively, one might say “language is a set of rules.” Then this tells nothing about its functions, and there are actually other systems that are also rule-governed.

Modern linguists have proposed various definitions of language, some of them are quoted below:

“Language is a purely human and non-instinctive method of communicating ideas, emotions and desires by means of voluntarily produced symbols.” (Sapir, 1921)

Language is “the institution whereby humans communicate and interact with each other by means of habitually used oral-auditory arbitrary symbols.” (Hall, 1968)

“From now on I will consider language to be a set (finite or infinite) of sentences, each finite in length and constructed out of a finite set of elements.” (Chomsky, 1957)

Each of these definitions has its own special emphasis, and is not totally free from limitations. However, there are some important characteristics of human language linguists have agreed on; these are embraced in the following generally accepted definition:

Language is a system of arbitrary vocal symbols used for human communication.

Short as it is, this definition has captured the main features of language. First of all, language is a system, i.e., elements of language are combined according to rules. This explains why “iblk” is not a possible sound combination in English, and also why “Been he

wounded has " is not a grammatically acceptable sentence in English.

Second, language is arbitrary in the sense that there is no intrinsic connection between a linguistic symbol and what the symbol stands for, for instance, between the word "pen" and the thing we write with. The fact that different languages have different words for the same object is a good illustration of the arbitrary nature of language. This also explains the symbolic nature of language: words are just symbols; they are associated with objects, actions, ideas, etc. by convention. This conventional nature of language is well illustrated by a famous quotation from Shakespeare's play "Romeo and Juliet": "A rose by any other name would smell as sweet."

Third, language is vocal because the primary medium for all languages is sound. All evidence points to the fact that writing systems came into being much later than the spoken forms and that they are only attempts to capture sounds and meaning on paper. The fact that children acquire spoken language before they can read or write also indicates that language is primarily vocal.

The term "human" in the definition is meant to specify that language is human-specific, i.e., it is very different from the communication systems other forms of life possess, such as bird songs and bee dances.

1.2.2 Design features

Design features refer to the defining properties of human language that distinguish it from any animal system of communication. By comparing language with animal communication systems, we can have a better understanding of the nature of language. A framework was proposed by the American linguist Charles Hockett. He specified twelve design features, five of which will be discussed here.

1) Arbitrariness

As mentioned earlier, language is arbitrary. This means that there is no logical connection between meanings and sounds. A

good example is the fact that different sounds are used to refer to the same object in different languages.

On the other hand, we should be aware that while language is arbitrary by nature, it is not entirely arbitrary; certain words are motivated. The best examples are the onomatopoeic words, such as *rumble*, *crash*, *cackle*, *bang* in English. Besides, some compound words are also not entirely arbitrary. For example while “photo” and “copy” are both arbitrary, the compound word “photocopy” is not entirely arbitrary. But, non-arbitrary words make up only a small percentage of the vocabulary of a language.

The arbitrary nature of language is a sign of sophistication and it makes it possible for language to have an unlimited source of expressions.

2) Productivity

Language is productive or creative in that it makes possible the construction and interpretation of new signals by its users. This is why they can produce and understand an infinitely large number of sentences, including sentences they have never heard before. They can send messages which no one else has ever sent before. Much of what we say and hear we are saying or hearing for the first time.

Productivity is unique to human language. Most animal communication systems appear to be highly restricted with respect to the number of different signals that their users can send and receive. For example, gibbon calls are not productive, for gibbons draw all their calls from a limited repertoire, which is rapidly exhausted, making any novelty impossible. And bee dancing is used only to indicate food sources, which is the only kind of message that can be sent through the dancing.

3) Duality

Language is a system, which consists of two sets of structures, or two levels. At the lower or the basic level there is a structure of sounds, which are meaningless by themselves. But the sounds of language can be grouped and regrouped into a large number of units of meaning, which are found at the higher level of the system. For example, the grouping of the three sounds /k/, /ɑ:/, and /p/ can mean either a kind of fish (carp), or a public place for rest and

amusement (park). Then the units at the higher level can be arranged and rearranged into an infinite number of sentences. This duality of structure or **double articulation** of language enables its users to talk about anything within their knowledge. No animal communication system has duality or even comes near to possessing it.

4) Displacement

Language can be used to refer to things which are present or not present, real or imagined matters in the past, present, or future, or in far-away places. In other words, language can be used to refer to contexts removed from the immediate situations of the speaker. This is what "displacement" means. This property provides speakers with an opportunity to talk about a wide range of things, free from barriers caused by separation in time and place.

In contrast, no animal communication system possesses this feature. Animal calls are mainly uttered in response to immediate changes of situation, i.e., in contact of food, in presence of danger, or in pain. Once the danger or pain is gone, calls stop.

5) Cultural transmission

While human capacity for language has a genetic basis, i.e., we were all born with the ability to acquire language, the details of any language system are not genetically transmitted, but instead have to be taught and learned. An English speaker and a Chinese speaker are both able to use a language, but they are not mutually intelligible. This shows that language is culturally transmitted. It is passed on from one generation to the next through teaching and learning, rather than by instinct. In contrast, animal call systems are genetically transmitted, i.e., animals are born with the capacity to produce the set of calls peculiar to their species.

Revision exercises:

1. How do you interpret the following definition of linguistics:
Linguistics is the scientific study of language.
2. What are the major branches of linguistics? What does each of

them study?

3. In what basic ways does modern linguistics differ from traditional grammar?
4. Is modern linguistics mainly synchronic or diachronic? Why?
5. For what reasons does modern linguistics give priority to speech rather than to writing?
6. How is Saussure's distinction between langue and parole similar to Chomsky's distinction between competence and performance?
7. What characteristics of language do you think should be included in a good, comprehensive definition of language?
8. What are the main features of human language that have been specified by C. Hockett to show that it is essentially different from animal communication system?

2 PHONOLOGY

2.1 The phonic medium of language

Speech and writing are the two media or substances used by natural languages as vehicles for communication. Many languages in the world today are both written and spoken. But statistics resulting from careful investigations show that there have been over 5,000 languages in the world, about two thirds of which have not had written form.

Of the two media of language, speech is more basic than writing for reasons that were discussed in the last chapter. The writing system of any language is always “invented” by its users to record speech when the need arises.

Language is first perceived through its sounds. Thus the study of sounds is of great importance in linguistics. Naturally, linguists are not interested in all sounds; they are concerned only with those sounds that are produced by humans through their speech organs and have a role to play in linguistic communication. These sounds are limited in number. This limited range of sounds which are meaningful in human communication constitute the **phonic medium of language**; and the individual sounds within this range are the **speech sounds**.

2.2 Phonetics

2.2.1 What is phonetics?

Phonetics is defined as the study of the phonic medium of language; it is concerned with all the sounds that occur in the world's languages.

Phonetics looks at speech sounds from three distinct but related points of view.

First, it studies the sounds from the speaker's point of view, i.e., how a speaker uses his speech organs to articulate the sounds. Then, it looks at the sounds from the hearer's point of view, i.e., how the sounds are perceived by the hearer. Lastly, it studies the way sounds travel by looking at the sound waves, the physical means by which sounds are transmitted through the air from one person to another. These three branches of phonetics are labelled **articulatory phonetics**, **auditory phonetics**, and **acoustic phonetics** respectively.

Of the three branches of phonetics, articulatory phonetics has the longest history. However, some important facts have also been either discovered or confirmed by acoustic and auditory phonetics, especially by the former. Acoustic phoneticians try to describe the physical properties of the stream of sounds which a speaker issues. To describe these properties, they record the sound waves on machines called **spectrographs**. By studying the sound waves thus recorded, they have discovered that what might be heard as the same one utterance is only coincidentally, if ever, physically identical. The "same" sounds we claim to have heard are in most cases only phonetically similar, but rarely phonetically identical. Phonetic similarity, not phonetic identity is the criterion with which we operate in the phonological analysis of languages.

2.2.2 Organs of speech

The articulatory apparatus of a human being are contained in

three important areas: the **pharyngeal cavity** — the throat, the **oral cavity** — the mouth, and the **nasal cavity** — the nose. The air stream coming from the lungs may be modified in these cavities in various ways. It may also be modified in the larynx before it reaches any of the cavities. Such modification results from some kind of interference with the movement of the air stream. The principal source of such modifications is the tongue, and the word “language” itself derives from the Latin word “lingua”, meaning the “tongue”.

The pharyngeal cavity

Air coming from the lungs and through the windpipe passes through the glottis, a part of the larynx, which is a bony structure at the end of the windpipe. This is the first point where sound modification might occur. Lying across the glottis are the vocal cords. These two thin tissues can be held tightly together to cut off the stream of air, as when one is ‘holding his breath’. They can be relaxed and folded back at each side to let air flow through freely and silently as in normal breathing. Then they may also be held together tautly so that the air stream vibrates them at different speeds when forcing its passage through them. Vibration of the vocal cords results in a quality of speech sounds called “**voicing**”, which is a feature of all vowels and some consonants in English. Such consonants are voiced. When the vocal cords are drawn wide apart, letting air go through without causing vibration, the sounds produced in such a condition are **voiceless**.

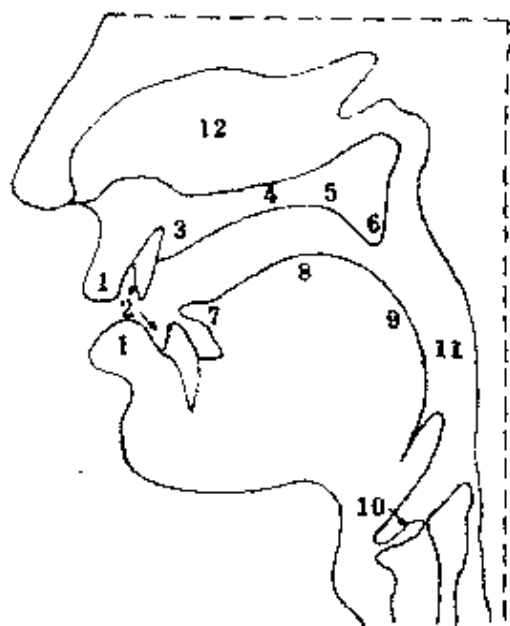
The oral cavity

The greatest source of modification of the air stream is found in the oral cavity. The speech organs located in this cavity are the tongue, the **uvula**, the **soft palate** (the **velum**), the **hard palate**, the **teeth ridge** (the **alveolus**), the teeth and the lips.

Of all these, the tongue is the most flexible, and is responsible for more varieties of articulation than any other. Obstruction between the back of the tongue and the velar area results in the pronunciation of [k] and [g]. The narrowing of space between the

hard palate and the front of the tongue leads to the sound [j]. The obstruction created between the tip of the tongue and the alveolar ridge results in the sounds [t] and [d]. Partial obstruction between the upper front teeth and the tip of the tongue produces the sounds [θ] and [ð].

Apart from the tongue and the roof of the mouth, obstruction can be created between the upper teeth and the lower lip resulting in the production of the two sounds [f] and [v]. Obstruction between the lips creates the sounds [p] and [b].



The speech organs

- | | |
|---------------------------|--------------------|
| 1. lips | 2. teeth |
| 3. teeth ridge (alveolus) | 4. hard palate |
| 5. soft palate (velum) | 6. uvula |
| 7. tip of tongue | 8. blade of tongue |
| 9. back of tongue | 10. vocal cords |
| 11. pharyngeal cavity | 12. nasal cavity |

The nasal cavity

The nasal cavity is connected with the oral cavity. The soft part of the roof of the mouth, the velum, can be drawn back to close the passage so that all air exiting from the lungs can only go through the mouth. The sounds produced in this condition are not nasalized, such as the vowels and most consonants in English. Then, the passage can also be left open to allow air (or part of it) to exit through the nose. In this case, the sounds pronounced are nasalized, such as the three nasal consonants in English [m], [n], and [ŋ]. Generally, the passage is definitely open or closed. But in some styles of speaking or in some dialects, partial opening may be observed, and the result is speech with a nasal colouring or "twang".

2.2.3 Orthographic representation of speech sounds —broad and narrow transcriptions

Towards the end of the nineteenth century, when articulatory pho-

netics had developed to such an extent in the West that scholars began to feel the need for a standardized and internationally accepted system of phonetic transcription. Thus the **International Phonetic Alphabet (IPA)** came into being. With minor modifications it is still widely used now. The basic principle of the IPA is using one letter selected from major European languages to represent one speech sound.

As some speech sounds produced differ only in some detailed aspects, the IPA provides its users with another set of symbols called **diacritics**, which are added to the letter-symbols to bring out the finer distinctions than the letters alone may possibly do.

Thus two ways to transcribe speech sounds are now available. One is the transcription with letter-symbols only and the other is the transcription with letter-symbols together with the diacritics. The former is called **broad transcription**. This is the transcription normally used in dictionaries and teaching textbooks for general purposes. The latter, i.e. the transcription with diacritics, is called **narrow transcription**. This is the transcription needed and used by the phoneticians in their study of speech sounds. With the help of the diacritics they can faithfully represent as much of the fine details as it is necessary for their purpose.

In broad transcription, the symbol [l] is used for the sound [l] in the four words *leaf* [li:f], *feel* [fi:l], *build* [bild], and *health* [helθ]. As a matter of fact, the sound [l] in all these four sound combinations differ slightly. The [l] in [li:f], occurring before a vowel, is called a clear [l], and no diacritic is needed to indicate it; the [l] in [fi:l] and [bild], occurring at the end of a word or before another consonant, is pronounced differently from the clear [l] as in "leaf". It is called dark [ɫ] and in narrow transcription the diacritic [ː] is used to indicate it. Then in the sound combination [helθ], the sound [l] is followed by the English dental sound [θ], its pronunciation is somewhat affected by the dental sound that follows it. It is thus called a dental [l], and in narrow transcription the diacritic [̪] is used to indicate it. It is transcribed as [heɫ̪θ].

Another example is the consonant [p]. We all know that [p] is pronounced differently in the two words *pit* and *spit*. In the word

pit, the sound [p] is pronounced with a strong puff of air, but in *spit* the puff of air is withheld to some extent. In the case of *pit*, the [p] sound is said to be **aspirated** and in the case of *spit*, the [p] sound is **unaspirated**. This difference is not shown in broad transcription, but in narrow transcription, a small raised “h” is used to show aspiration, thus *pit* is transcribed as [p^hit] and *spit* is transcribed as [spit].

2.2.4 Classification of English speech sounds

An initial classification will divide the speech sounds in English into two broad categories: vowels and consonants. Two definitions of vowels as a general phonetic category are quoted below:

“Vowels are modifications of the voice-sound that involve no closure, friction, or contact of the tongue or lips.”

(Bloomfield)

“A vowel is defined as a voiced sound in forming which the air issues in a continuous stream through the pharynx and mouth, there being no audible friction.”

(Jones)

The two definitions point to one important feature of vowels, i. e. in producing a vowel the air stream coming from the lungs meets with no obstruction whatsoever. This marks the essential difference between vowels and consonants. In the production of the latter category it is obstructed in one way or another.

2.2.4.1 Classification of English consonants

English consonants can be classified in two ways: one is in terms of manner of articulation and the other is in terms of place of articulation.

In terms of manner of articulation the English consonants can be classified into the following types:

stops: When the obstruction created by the speech organs is to-

tal or complete, the speech sound produced with the obstruction audibly released and the air passing out again is called a **stop** or a **plosive**. The English stops fall into three pairs: [p][b], [t][d], and [k][g].

fricatives: When the obstruction is partial and the air is forced through a narrow passage in the mouth so as to cause definite local friction at the point, the speech sound thus produced is a fricative. The fricatives in English are [f][v][s][z][ʃ][ʒ][ʃ][s][z][h].

affricates: When the obstruction, complete at first, is released slowly with the friction resulting from partial obstruction (as in fricatives), the sounds thus produced are affricates. In English there are two affricates [tʃ] and [dʒ].

liquids: When the airflow is obstructed but is allowed to escape through the passage between part or parts of the tongue (the tip or the sides) and the roof of the mouth, the sounds thus produced are called liquids. The English liquids are [l] and [r]. [l] is called a lateral sound because in the production of it the surface of the tongue, instead of being more or less flat, is made slightly convex and causes stoppage in the centre of the roof of the mouth while allowing air to pass at the sides. In the production of the other liquid [r], the tip of the tongue is curled back and the air passes over it. It is also called "retroflex".

nasals: When the nasal passage is opened by lowering the soft palate at the back of the mouth and air is allowed to pass through it, the sounds thus produced are called nasals. There are three nasals in English [m] [n] and [ŋ].

glides: Glides, sometimes called "semivowels", are a rather marginal category. The English glides are [w] and [j], both voiced. They are formed in the same manner as the vowels [ɪ] and [u], with a narrower passage between the lips or between the tongue and the hard palate to cause some slight noise from the local obstruction.

In terms of place of articulation, the English consonants can be classified into the following types:

bilabial: In the production of these sounds, the upper and the lower lips are brought together to create obstruction. The English

bilabials are [p] [b] [m] [w].

labiodental: In the production of these sounds, the lower lip is brought into contact with the upper teeth, thus creating the obstruction. The labiodental sounds in English are [f] and [v].

dental: The obstruction is created between the tip of the tongue and the upper teeth. There are two dental sounds in English; they are [θ] and [ð].

alveolar: The tip of the tongue is brought into contact with the upper teeth-ridge to create the obstruction. The alveolar sounds are [t] [d] [s] [z] [n] [l] [r].

palatal: The obstruction is between the back of the tongue and the hard palate. The palatal sounds are [ʃ] [ʒ] [tʃ] [dʒ] [j].

velar: The back of the tongue is brought into contact with the velum, or the soft palate. The sounds thus produced in English are [k] [g] and [ŋ].

glottal: The vocal cords are brought momentarily together to create the obstruction. There is only one glottal sound in English, i.e. [h].

The two classifications are combined in the table below, with the help of which we can adequately describe a consonant, or identify a consonant when given its phonetic features:

		Bilabial	Labio-dental	Dental	Alveolar	Palatal	Velar	Glottal
Stops	VL	p			t		k	
	VD	b			d		g	
Fricatives	VL		f	θ	s	ʃ		h
	VD		v	ð	z	ʒ		
Affricates	VL				(tʃ)	tʃ		
	VD				(dʒ)	dʒ		
Nasals	VD	m			n		ŋ	
Liquids	VD				l, r			
Glides	VD	w				j		

2.2.4.2 Classification of English vowels

As in the production of vowels the air stream meets with no obstruction, they cannot be classified in terms of manner of articula-

tion or place of articulation as consonants. Other criteria have to be found for their classification. Vowel sounds are differentiated by a number of factors: the position of the tongue in the mouth, the openness of the mouth, the shape of the lips, and the length of the vowels.

Vowels may be distinguished as **front**, **central**, and **back** according to which part of the tongue is held highest. A front vowel is one in the production of which the front part of the tongue maintains the highest position; the English front vowels include [i:] [ɪ] [e] [æ] [ɑ]. If it is the central part of the tongue that is held highest, the vowels thus produced are called central vowels. The central vowels in English are [ə:] [ə] and [ʌ]. Then if we raise the back of the tongue higher than the rest of it, we produce the back vowels: [u:] [ʊ] [ɔ:] [ɒ] and [ɑ:].

To further distinguish members of each group, we need to apply another criterion, i.e. the openness of the mouth. Accordingly, we classify the vowels into four groups: **close vowels**, **semi-close vowels**, **semi-open vowels**, and **open vowels**. The close vowels are [i:] [ɪ] [u:] and [ʊ]; the semi-close vowels are [e] and [ɜ:], the semi-open vowels are [ə] and [ɔ:] and the open vowels are [æ] [ɑ] [ʌ] [ɒ] and [ɔ:]. The following diagram summarises our classification by applying the two criteria:

	Front	Central	Back
Close	i: ɪ		u: ʊ
semi-close	e	ɜ:	
semi-open		ə	ɔ:
open	æ ɑ	ʌ	ɒ ɑ:

A third criterion that is often used in the classification of vowels is the shape of the lips. In English, all the front vowels and the central vowels are **unrounded** vowels, i.e., without rounding the lips,

and all the back vowels, with the exception of [ɑ:], are **rounded**. It should be noted that some front vowels can be pronounced with rounded lips.

After applying the three criteria, we can now aptly describe some of the English vowels. For example, the vowel [e] can be described as front, semi-close, and unrounded. But the feature “unrounded” is usually omitted since all front vowels in English are unrounded.

Then the English vowels can also be classified according to the length of the sound. Corresponding to the distinction of long and short vowels is the distinction of tense and lax vowels. The long vowels are all tense vowels and the short vowels are lax vowels. When we pronounce a long vowel, the larynx is in a state of tension, and in the pronunciation of a short vowel, no such tension occurs, the larynx is quite relaxed.

So far we have been classifying the individual vowels, also known as **monophthongs**. In English there are also a number of **diphthongs**, which are produced by moving from one vowel position to another through intervening positions. The diphthongs include [eɪ][aɪ][aʊ][əʊ][ɔɪ][ɪə][eə][ʊə].

2.3 Phonology

2.3.1 Phonology and phonetics

Both phonology and phonetics are concerned with the same aspect of language — the speech sounds. But while both are related to the study of sounds, they differ in their approach and focus. As we have seen in the last section, phonetics is of a general nature; it is interested in all the speech sounds used in all human languages: how they are produced, how they differ from each other, what phonetic features they possess, how they can be classified, etc. Phonology, on the other hand, aims to discover how speech sounds in a language form patterns and how these sounds are used to convey meaning in linguistic communication.

Now let's take the [l] sound in English as an example and see how the same sound can be investigated from both the phonetic and the phonological point of view. As we know, the [l] sound in the two English words *leap* and *peel* is pronounced differently. The first one is what we call a clear [l] and the second one a dark [ɫ]. The difference between these two sounds is what the phoneticians are interested in. But phonologically these sounds are regarded to be two versions of the same one basic entity. From the phonological point of view, these two sounds are fundamentally the same, since they have one and the same function in communication, in distinguishing between words and meanings despite their difference in pronunciation. If someone should pronounce the dark [ɫ] in the word "peel" incorrectly as a clear [l], an English speaker would not for this reason fail to understand him, he would still understand what action he is talking about but would only find his pronunciation a little bit strange. The phonologists have found that the various versions of the [l] sound do not occur at random in English; their distribution follows a nicely complementary pattern: we use clear [l] before a vowel, such as *loaf*, and dark [ɫ] at the end of a word after a vowel or before a consonant, such as *tell*, *quilt*. This is an important phonological conclusion. But phonology is concerned with the sound system of a particular language, so the conclusions we reach about the phonology of one language is very often language specific and should not be applied to another language without discretion. What is true in one language may not be true in another language.

2.3.2 Phone, phoneme, and allophone

A phone is a phonetic unit or segment. The speech sounds we hear and produce during linguistic communication are all phones. When we hear the following words pronounced: *pit*, *spit*, *tip*, *feel*, *leaf*, the phones we have heard are [p^h] (as in *pit*), [p] (as in *spit*), [p^h] (as in *tip*), [s], [t], [f], [i:], [ɪ], [l] (as in *leaf*), [ɫ] (as in *feel*).

But a phone does not necessarily distinguish meaning; some

do, some don't. For example, [s] and [t] do, as [si:m] and [ti:m] are two words with totally different meanings, and [t^h] and [t] don't, as [stop] and [st^hɒp] mean the same to a speaker of English. Again, we should remind ourselves that what does not distinguish meaning in one language may probably do in another language.

A **phoneme** is a phonological unit; it is a unit that is of distinctive value. It is an abstract unit. It is not any particular sound, but rather it is represented or realized by a certain phone in a certain phonetic context. For example, when we pronounce the two words *peak* and *speak*, we are aware that the sound [p] is pronounced differently. In the word *peak*, the [p] sound is pronounced with a strong puff of air stream; but the same stop sound is pronounced slightly differently in the word *speak*, the puff of air is withheld a little. The [p] sound in *peak* is called an **aspirated** [p^h], and the [p] sound in *speak* is an **unaspirated** [p]. The relation between aspirated [p^h] and unaspirated [p] corresponds to that between clear [l] and dark [ɫ]: there is a slight difference in the way they are pronounced, but such a difference does not give rise to difference in meaning. So /p/ is a phoneme in the English sound system, and it can be realized differently as aspirated or unaspirated in different contexts. Conventionally phones are placed within square brackets, and phonemes in slashes. The different phones which can represent a phoneme in different phonetic environments are called the **allophones** of that phoneme. For example, the phoneme /l/ in English can be realized as dark [ɫ], clear [l], etc. which are allophones of the phoneme /l/.

Then, how a phoneme is represented by a phone, or which allophone is to be used, is determined by the phonetic context in which it occurs. But the choice of an allophone is not random or haphazard; it is rule-governed. One of the tasks of the phonologists is to find out these rules. The rule that governs the distribution of clear [l] and dark [ɫ] is an example.

Although phonemes are the minimal segments of language systems, they are not their minimal elements. A phoneme is further analyzable because it consists of a set of simultaneous distinctive features. It is just because of its distinctive features that a phoneme

is capable of distinguishing meaning. A native speaker of English can tell by intuition that the following sound combinations all carry different meanings: [mæn], [pæn], [bæn], [tæn], [ræn], [kæn], [ðæn]. This is because they all contain a different phoneme. The features that a phoneme possesses, making it different from other phonemes, are its distinctive features.

2.3.3 Phonemic contrast, complementary distribution, and minimal pair

It can be easily observed that phonetically similar sounds might be related in two ways. If they are two distinctive phonemes, they are said to form a **phonemic contrast**, e. g. /p/ and /b/ in [pit] and [bit], [rəʊp] and [rəʊb]. If they are allophones of the same phoneme, then they do not distinguish meaning, but complement each other in distribution, i. e. they occur in different phonetic environments. For instance, the clear [ɪ] always occurs before a vowel while the dark [ɪ̞] always occurs between a vowel and a consonant, or at the end of a word. So the allophones are said to be in **complementary distribution**.

A basic way to determine the phonemes of a language is to see if substituting one sound for another results in a change of meaning. If it does, the two sounds then represent different phonemes. An easy way to do this is to find the **minimal pairs**. When two different forms are identical in every way except for one sound segment which occurs in the same place in the strings, the two sound combinations are said to form a minimal pair. So in English, *pill* and *bill* are a minimal pair, and so are *pill* and *till*, *till* and *kill*, *kill* and *dill*, and *dill* and *gill*. Accordingly, we can conclude that /p//b//t//d//k/ are phonemes in English. Then all these sound combinations together constitute a **minimal set**; they are identical in form except for the initial consonant. This also applies to the vowels. The pronunciations of the following words are identical except for the vowel: *beat*, *bit*, *bet*, *bat*, *boot*, *but*, *bait*, *bite*, *boat*. So they form a minimal set, from which we can conclude that all these vowels: /i:/ /ɪ / /e/ /æ / /u:/ /ʌ / /eɪ / /aɪ / /əʊ / are phonemes

in English.

2.3.4 Some rules in phonology

2.3.4.1 Sequential rules

To identify the phonemes of a language is only part of the task of the phonologist. He also has to find out in what way the phonemes can be combined. The patterning of sounds in a particular language is governed by rules. The phonological system determines which phonemes can begin a word, end a word, and follow each other. Suppose you are given four cards, each of which has a different phoneme in English printed on it:

k b l i

Now if you are asked to arrange these cards to form all the “possible” words in English, you might order them as: *blik*, *klib*, *bilk*, *kilb*. Your knowledge of English “tells” you that these are the only arrangements of these phonemes permissible in English, and that *lbki*, *ilbk*, *bkil*, *ilkb*, etc. are not possible words in English. This indicates that there are rules that govern the combination of sounds in a particular language. These rules are called **sequential rules**.

There are many such sequential rules in English. For example, if a word begins with a [l] or a [r], then the next sound must be a vowel. That is why [lbɪk] [lkɪ] are impossible combinations in English. They have violated the restrictions on the sequencing of phonemes.

Also, if three consonants should cluster together at the beginning of a word, the combination should obey the following three rules:

- (1) The first phoneme must be /s/
- (2) The second phoneme must be /p/ or /t/ or /k/
- (3) The third phoneme must be /l/ or /r/ or /w/.

This is why all words beginning with a combination of three consonants in English are words like *spring* [sprɪŋ], *strict* [strikt], *square* [skweə], *splendid* ['splendɪd], *scream* [skri:m].

Again, the rules governing the phonological patterning are lan-

guage specific. What is not permissible in English might be permissible in another language. For example, the velar nasal [ŋ] never occurs in initial position in English or standard Chinese. But it does in other languages and some regional dialects of Chinese, such as Vietnamese, Shanghai dialect, and Cantonese.

2.3.4.1 Assimilation rule

The **assimilation rule** assimilates one sound to another by “copying” a feature of a sequential phoneme, thus making the two phones similar. Assimilation of neighbouring sounds is, for the most part, caused by articulatory or physiological processes. When we speak, we tend to increase the ease of articulation. This “sloppy” tendency may become regularized as rules of language.

We all know that nasalization is not a phonological feature in English, i. e., it does not distinguish meaning. But this does not mean that vowels in English are never nasalized in actual pronunciation; in fact they are nasalized in certain phonetic contexts. For example, the [i:] sound is nasalized in words like *bean*, *green*, *team*, and *scream*. This is because in all these sound combinations the [i:] sound is followed by a nasal [n] or [m].

The assimilation rule also accounts for the varying pronunciation of the alveolar nasal [n] in some sound combinations. The rule is that within a word, the nasal [n] assumes the same place of articulation as the consonant that follows it. We know that in English the prefix *in-* can be added to an adjective to make the meaning of the word negative, e. g. *discreet* — *indiscreet*, *correct* — *incorrect*. But the [n] sound in the prefix *in-* is not always pronounced as an alveolar nasal. It is so in the word *indiscreet* because the consonant that follows it, i. e. [d], is an alveolar stop, but the [n] sound in the word *incorrect* is actually pronounced as a velar nasal, i. e. [ŋ]; this is because the consonant that follows it is [k], which is a velar stop. So we can see that while pronouncing the sound [n], we are “copying” a feature of the consonant that follows it.

The sound assimilation is actually reflected in the spelling in most cases. Instead of *impossible*, the negative form of *possible* is *impossible*, as the [n] sound is assimilated to [m]. For the same

reason, the negative forms of *plausible*, *legal*, *regular* are *implausible*, *illegal*, and *irregular*.

2.3.4.3 Deletion rule

Another phonological rule is the **deletion rule**. It tells us when a sound is to be deleted although it is orthographically represented. We have noticed that in the pronunciation of such words as *sign*, *design*, and *paradigm*, there is no [g] sound although it is represented in spelling by the letter g. But in their corresponding forms *signature*, *designation*, and *paradigmatic*, the [g] represented by the letter g is pronounced. The rule can be stated as: Delete a [g] when it occurs before a final nasal consonant. Given the rule, the phonemic representation of the stems in *sign* — *signature*, *resign* — *resignation*, *phlegm* — *phlegmatic*, *paradigm* — *paradigmatic* will include the phoneme /g/, which will be deleted according to the regular rule if no suffix is added.

2.3.5 Suprasegmental features — stress, tone, intonation

So far we have been dealing with the phonemes — sound segments that distinguish meaning. But distinctive features can also be found running over a sequence of two or more phonemic segments. The phonemic features that occur above the level of the segments are called **suprasegmental features**; these are the phonological properties of such units as the syllable, the word, and the sentence. The main suprasegmental features include stress, intonation, and tone.

2.3.5.1 Stress

Depending on the context in which stress is considered, there are two kinds of stress: word stress and sentence stress.

The location of stress in English distinguishes meaning. For example, a shift of stress may change the part of speech of a word from a noun to a verb although its spelling remains unchanged. The noun has the stress on the first syllable and the corresponding verb has the stress on the second syllable. This is exemplified in such

words as 'import n. — im'port v. , 'increase n. — in'crease v. , 'progress n. — pro'gress v. , 'insult n. — in'sult v. , 'convict n. — con'vict v. , rebel n. — re'bel v. , produce n. — pro'duce v. , combine n. — com'bine v. , permit n. — per'mit v. , pervert n. — per'vert v. .

Similar alteration of stress also occurs between a compound noun and a phrase consisting of the same elements. A phonological feature of the English compounds is that the stress of the word always falls on the first element, and the second element receives secondary stress. For example, the compound noun *blackbird* consists of two elements — *black* and *bird*. In pronouncing the word, we stress the first element *black*. A *blackbird* refers to a particular kind of bird, which is not necessarily black. It differs from the noun phrase *black bird*. The noun phrase is stressed differently from the compound. As it is a noun phrase with *bird* as its head noun and *black* a modifier, the word *bird* is primarily stressed. A similar difference in stress pattern and meaning can be found in such pairs as *greenhouse* and *green house*, *hotdog* and *hot dog*.

The meaning-distinctive role played by word stress is also manifested in the combinations of *-ing* forms and nouns. It is common in English to find an *-ing* form followed by a noun, such as *dining-room*, *reading glasses*, *sewing machine*, *sleeping baby*, *swimming fish*. Although identical in form, these *-ing* + noun combinations are of two types. For one type, the *-ing* form serves as a modifier of the noun, e.g. *dining-room*, *reading glasses*. These are actually compound nouns. As a rule, in pronouncing this type of *-ing* + noun combinations, the word stress always falls on the first element; the second element receives secondary stress: 'dining-room, 'reading glasses, 'sewing machine.

For the other type of *-ing* + noun combinations, the noun is actually the doer of the action indicated by the *-ing* form, e.g. *sleeping baby*, *swimming fish*. These are not compound nouns, but noun phrases with an *-ing* participle modifier. For these combinations, the primary stress falls on the head noun, and the *-ing* form receives secondary stress.

Sentence stress refers to the relative force given to the compo-

nents of a sentence. The parts of speech that are normally stressed in an English sentence are nouns, main verbs, adjectives, adverbs, numerals and demonstrative pronouns; the other categories of words like articles, person pronouns, auxiliary verbs, prepositions, and conjunctions are usually not stressed. To give special emphasis to a certain notion, a word in a sentence that is usually unstressed can be stressed. For example, in the sentence: *He is driving my car*, the words that are normally unstressed, i.e. *He*, *is*, *my*, can all bear the stress to express what the speaker intends to mean.

2.3.5.2 Tone

Tones are pitch variations, which are caused by the differing rates of vibration of the vocal cords. Pitch variations can distinguish meaning just like phonemes; therefore, the tone is a suprasegmental feature. The meaning-distinctive function of the tone is especially important in what we call tone languages. English is not a tone language. Our mother tongue, Chinese, is a typical tone language. It has four tones. The first tone is level(阴平), the second rise(阳平), the third fall-rise(上声), and the fourth fall(去声). The role of the tone can be well illustrated by pronouncing the same sound combination such as “ma” in the four different tones:

mā (妈) má (麻) mǎ (马) mà (骂)

2.3.5.3 Intonation

When pitch, stress and sound length are tied to the sentence rather than the word in isolation, they are collectively known as intonation. Intonation plays an important role in the conveyance of meaning in almost every language, especially in a language like English. English has four basic types of intonation, known as the four tones: the falling tone, the rising tone, the fall-rise tone, and the rise-fall tone. The most frequently used are the first three. When spoken in different tones, the same sequence of words may have different meanings. Generally speaking, the falling tone indicates that what is said is a straight-forward, matter-of-fact statement, the rising tone often makes a question of what is said, and the fall-rise tone often indicates that there is an implied message in

what is said. Compare the following three different ways of saying the same sentence:

- (1) 'That's 'not the 'book he `wants.
- (2) 'That's 'not the 'book he ˈwants.
- (3) 'That's ,not the ,book he ˈwants.

Spoken in the falling-tone, version (1) simply states a fact, i. e., the book in question is not the one he wants. Version (2), said in the rising tone, indicates uncertainty on the part of the speaker; he is asking the question: Is that not the book he wants? Version (3), spoken in the fall-rise tone indicates that apart from what is said literally, there is an implied message, i. e., besides telling the listener that the book in question is not the one he wants, the speaker implies that there is some other book he wants.

Similarly, the sentence *I can't eat anything*, when said in the falling tone, is equal in meaning to *I can eat nothing*. But if the sentence is said in the fall-rise tone, it implies that there are particular things that I can eat.

Intonation can make a certain part of a sentence especially prominent by placing the nucleus on it. Nucleus refers to the major pitch change in an intonation unit. Within one intonation unit, the nucleus normally falls on the last stressed syllable. Shifting the nucleus to another syllable, normally stressed or unstressed, will cause difference in meaning.

Revision exercises :

1. What are the two major media of linguistic communication? Of the two, which one is primary and why?
2. What is voicing and how is it caused?
3. Explain with examples how broad transcription and narrow transcription differ?
4. How are the English consonants classified?
5. What criteria are used to classify the English vowels?
6. Give the phonetic symbol for each of the following sound de-

scriptions:

- 1) voiced palatal affricate
- 2) voiceless labiodental fricative
- 3) voiced alveolar stop
- 4) front, close, short
- 5) back, semi-open, long
- 6) voiceless bilabial stop

Give the phonetic features of each of the following sounds:

- 1) [d] 2) [l] 3) [tʃ] 4) [w] 5) [ʊ] 6) [æ]

7. How do phonetics and phonology differ in their focus of study? Who do you think will be more interested in the difference between, say, [l] and [ɫ], [p^h] and [p], a phonetician or a phonologist? Why?
8. What is a phone? How is it different from a phoneme? How are allophones related to a phoneme?
9. Explain with examples the sequential rule, the assimilation rule, and the deletion rule.
10. What are suprasegmental features? How do the major suprasegmental features of English function in conveying meaning?

3 MORPHOLOGY

3.1 Morphology

3.1.1 Open class and closed class

In English, nouns, verbs, adjectives and adverbs make up the largest part of the vocabulary. They are the content words of a language, which are sometimes called **open class words**, since we can regularly add new words to these classes. *Beatnik*, for example, was added to the class of nouns to mean “a member of the Beat Generation”, or “a person who rejects or avoids conventional behaviour”.

The other syntactic categories include “grammatical” or “functional” words. Conjunctions, prepositions, articles and pronouns consist of relatively few words and have been referred to as being **closed class words** since new words are not usually added to them. For example, it is not easy to think of new conjunctions that have entered the English language recently. One example we can think of is that, with the growth of the feminist movement, some people have suggested that we use “e” pronounced like the letter itself, as a new neutral third person singular pronoun, neither masculine nor feminine, which could be used as the general form. Others, however, have pointed out that *they/their* are already being used as a neutral third person singular, as in the sentences *Anyone can join the club if they like. Everyone can do their best.* Of the two propos-

als, which one is the better candidate? As pronouns have “closed” nature, we predict that *they/their* will stand a better chance to serve this need than a completely new pronoun.

3.1.2 Internal structure of words and rules for word formation

If we look at the following pairs of words, we will discover that the meanings of all the words in column **B** consist of the meanings of the words in column **A** plus the meaning “not”.

A	B
<i>like</i>	<i>dislike</i>
<i>order</i>	<i>disorder</i>
<i>appear</i>	<i>disappear</i>
<i>approve</i>	<i>disapprove</i>
<i>agree</i>	<i>disagree</i>
<i>advantages</i>	<i>disadvantages</i>
<i>entangle</i>	<i>disentangle</i>

Speakers of English would know the meaning of the word beginning with *dis-* if they know the word without *dis-*.

If we assume that the most elemental units of meaning are the words of a language, it would be a coincidence that *dis-* has the same meaning in all the column **B** words above. But this is obviously no coincidence. The words in column **B** all consist of at least two meaningful units:

dis + *approve* *dis* + *appear* *dis* + *like*

Another fact about English words is that their internal structure is subject to rules. A negative, for example, is formed not by adding *dis* to the end of the word, but by adding it to the beginning. Thus *disorderly* and *disgraceful* are words in English, but **orderlydis*^①(to mean *not orderly*) and **gracefuldis* (to mean *not graceful*) are not. **Morphology** thus refers to the study of the internal structure of words, and the rules by which words are formed.

① The asterisk refers to nonsense words or unacceptable sentences.

In the following sections we will be discussing briefly how words are formed in English and what it is speakers of English know about word formation, about the morphology of their language.

3.2 Morphemes —the minimal units of meaning

We have already seen that some words are formed by combining a number of distinct units of meaning. The most basic element of meaning is traditionally called **morpheme**.

The following list shows that in English a single word may consist of one or more morphemes.

one morpheme	<i>desire</i>
two morphemes	<i>desire</i> + <i>able</i>
three morphemes	<i>desire</i> + <i>able</i> + <i>ity</i>
four morphemes	<i>un</i> + <i>desire</i> + <i>able</i> + <i>ity</i>

In fact every word in every language is composed of one or more morphemes.

The above examples tell us while some morphemes like *girl* and *rely* can constitute words by themselves, others like *-ish* and *-able* are never words but always parts of words. Thus *un-* is like *dis-* (*disorder*, *disagree*); it occurs only before other morphemes. Such morphemes are called **prefixes**. Other morphemes occur only as **suffixes**, i. e. only after other morphemes. Examples of such morphemes are *-or* (*operator*), *-er* (*writer*), and *-ful* (*wonderful*), to mention just a few.

Traditionally, these prefixes have been called **bound morphemes**, i. e. they cannot occur “unattached”, as distinct from **free morphemes** like *girl*, *rely* and so on. In speaking, we seldom use bound morphemes alone. Instead, we combine all morphemes into longer units and sentences.

3.3 Derivational and inflectional morphemes

You may have noted that in English there are morphemes which

change the category, or grammatical class of words. A verb, for example, is formed by adding *-en* to the adjective *black*, — *black-en*, or by adding *-ize* to the noun *computer* — *computerize*. Other examples are:

noun + adjective	<i>affection</i> + <i>ate</i>
	<i>alcohol</i> + <i>ic</i>

-en, *-ate*, and *-ic* are thus called **derivational morphemes**, because when they are conjoined to other morphemes (or words) a new word is derived, or formed.

Other derivational morphemes do not change grammatical class, as in

<i>inter</i> + <i>collegiate</i>	<i>macro</i> + <i>economics</i>
<i>tele</i> + <i>commute</i>	<i>multi</i> + <i>media</i>

As noted, many prefixes fall into this category. Similarly, we find suffixes of this type, as in:

<i>physic</i> + <i>ian</i>	<i>fad</i> + <i>ism</i>
<i>Americ</i> + <i>an</i>	

As mentioned previously, a morpheme can be defined as a **minimal unit** of meaning. This definition, however, is too simple. Some morphemes may occur in many words, combining with different morphemes but for which it is difficult to find a constant meaning. For example, how do you assign meaning to the morpheme *-ceive* in words like *receive*, *perceive*, *conceive* or *-mit* in *remit*, *permit*, *commit*, *submit*? When we combine words to form sentences, these sentences are combinations of morphemes. Let's study the following sentences:

(3-1) They are planning to computerize their entire accounting system.

(3-2) It is wet today.

(3-3) Cathy found it exciting to drive on the elevated road.

What is the meaning of *to* and *it* in the above sentences? Obviously we cannot assign them a lexical meaning. *To* has only a grammatical "meaning" as an **infinitive marker**, and *it*, as a morpheme, is required by the syntactic rules of the language. A conclusion can thus be drawn that it is not always possible to assign a lexical meaning to some of the morphemes.

Similarly, there are bound morphemes which are for the most part purely grammatical markers, signifying such concepts as tense, number, case and so on.

Such bound morphemes are referred to as **inflectional morphemes**. They are attached to words or morphemes, but they never change their syntactic category. Consider the verb forms in the following sentences:

(3-4) John has noticed the change in his friend.

(3-5) As he was walking to the station, he noticed one of his former supervisors.

Here the *-ed* and *-ing* endings are morphemes which do not add any lexical meaning, but which represent the concept of tense and aspect.

3.4 Morphological rules of word formation

Look at the following list of words:

A	B
*kroup	<i>slowly</i>
*rearn	<i>clearly</i>
*slarm	<i>quickly</i>

While each word in column A is only a permissible sound sequence with no meaning attached to it, in column B we find perfect English words made up of two morphemes. The ways words are formed are called **morphological rules**. These rules determine how morphemes combine to form words.

Some of the morphological rules can be used quite freely to form new words. We call them **productive morphological rules**. We can, for example, add the prefix *un-* to derived words that have been formed by morphological rules:

un + accept + able
un + think + able
un + touch + able

un + warrant + able

un + impeach + able

un + inhabit + able

Such a rule can be stated as:

un + ADJECTIVE = not — ADJECTIVE

This rule holds good for the words above, though we notice the following exceptions:

*sad — *unsad*

*brave — *unbrave*

It might be presumed that the “un-Rule” is not as productive for adjectives composed of just one morpheme as for adjectives that are themselves derived from verbs. The rule seems to be freely applicable to an adjectival form derived from a verb, as in

undecided unchecked

unabridged undeclared

unsimplified unauthorized

and other examples.

Morphological rules may thus be productive (constantly used to form new words) or less productive. The suffix *-ity* is found in many words:

sincerity from sincere

scarcity from scarce

Yet the phrase *the fiercity of the lion* sounds somewhat strange. As some linguists point out it is either a speech error or the speaker is attempting humour. The existence of the related pairs like *sincere / sincerity* (but not *fierce / *fiercity*) shows that a productive morphological rule can, in the course of time, become less productive.

3.5 Compounds

In the last section we saw how derivational and free morphemes combine to produce new words. Another way to form new words, or **compound words**, to be more exact, is by stringing words together, as shown in the examples below:

	-adj.	-noun	-verb	-prep.
adj. -	<i>bittersweet</i>	<i>clearway</i>	<i>whitewash</i>	<i>blackout</i>
noun -	<i>headstrong</i>	<i>rainbow</i>	<i>spoonfeed</i>	<i>headsoff</i>
verb -	<i>carryall</i>	<i>pickpocket</i>	<i>sleepwalk</i>	<i>cutup</i>
prep. -	<i>inborn</i>	<i>off-licence</i>	<i>undertake</i>	<i>without</i>

When we form compounds, the following points are noteworthy:

a) When the two words are in the same grammatical category, the compound will be in this category:

noun + noun	<i>post box</i>	<i>landlady</i>
adjective + adjective	<i>blue-black</i>	<i>icy-cold</i>

b) In many cases, the two words fall into different categories. Then the class of the second or final word will be the grammatical category of the compound:

noun + adjective	<i>head-strong</i>
verb + noun	<i>pickpocket</i>

This, however, is not always true, and compounds with a preposition are in the category of the nonprepositional part of the compound, as in

<i>under 'take</i>	<i>in 'action</i>	<i>up' lift</i>
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c) It is often the case that compounds have different stress patterns from the **noncompounded word sequence**, thus in

<i>'redcoat</i>	<i>'greenhouse</i>
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we find the primary stress on the first part of the compound, whereas in

<i>red coat</i>	<i>green house</i>
-----------------	--------------------

on the noun the adjective qualifies.

d) The meaning of a compound is not always the sum of the meanings of its parts. Compare the following pair of sentences:

(3-6) *Kate found a red coat in her aunt's closet.*

(3-7) *Kate found a' Redcoat in her aunt's closet.*

As can be seen, the two sentences, though seemingly similar, are quite different in meaning.

While the meaning of each compound includes at least to some extent the meanings of individual parts, as in *a falling star* (a star that falls) and *a looking glass* (which doesn't mean "a glass that looks" but "a glass in which one can see one's face"), other com-

pounds do not seem to relate to the meanings of the individual parts at all. A *bigwig*, for example, does not have a big wig, nor does a *highbrow* necessarily have a high brow. A *jack-in-a-box* is a tropical tree, and a *turncoat* is a tractor.

Morphological rules thus reveal the relations between words and provide the means for forming new words. It is these rules that enable us to coin new words, such as *hair spray*, *tea ceremony*, *space walk* and *teach-in*. Compounding is then a very common and frequent process for enlarging the vocabulary of the English language.

Revision exercises:

1. Divide the following words into their separate morphemes by placing a “+” between each morpheme and the next:

a. microfile	e. telecommunication
b. bedraggled	f. forefather
c. announcement	g. psychophysics
d. predigestion	h. mechanist
2. Think of three morpheme suffixes, give their meaning, and specify the types of stem they may be suffixed to. Give at least two examples of each.

Model: -or
 suffix: -or
 meaning: the person or thing performing the action
 stem type: added to verbs
 examples: actor, “one who acts in stage plays, motion pictures, etc.” translator, “one who translates”
3. Think of three morpheme prefixes, give their meaning, and specify the types of stem they may be prefixed to. Give at least two examples of each.

Model: -a
 prefix: -a
 meaning: “without; not”
 stem type: added to adjectives

examples: asymmetric, “lacking symmetry” asexual, “without sex or sex organs”

4. The italicized part in each of the following sentences is an inflectional morpheme. Study each inflectional morpheme carefully and point out its grammatical meaning.

Sue *moves* in high-society circles in London.

A traffic warden *asked* John to move his car.

The club *has moved* to Friday, February 22nd.

The branches of the trees *are moving* back and forth.

4 SYNTAX

4.1 What is syntax?

Syntax is a branch of linguistics that studies how words are combined to form sentences and the rules that govern the formation of sentences. There are half a dozen major different syntactic theories. What we are going to introduce here is the simple version of transformational syntax both because it is the most popular and best known approach to syntactic analysis and because many of the other approaches that exist today have developed in response to it.

In this chapter we are concerned with the composition of sentences by introducing some of the most common categories of words in English as well as some simple rules that govern the organization of these categories into larger structural units.

4.2 Categories

4.2.1 Word-level categories

Category refers to a group of linguistic items which fulfill the same or similar functions in a particular language such as a sentence, a noun phrase or a verb.

A fundamental fact about words in all human languages is that

they can be grouped together into a relatively small number of classes, called **syntactic categories**. This classification reflects a variety of factors, including the type of meaning that words express, the type of affixes that they take, and the type of structures in which they can occur. The most central categories to the syntactic study are the word-level categories. In traditional grammar only about eight categories (called parts of speech) are recognized, but all current theories of grammar have found it necessary to increase this number by the addition of such non-traditional categories as **determiner** (Det), **degree words** (Deg) and **qualifier** (Qual). There is as yet no complete consensus as to precisely which lexical categories should be recognized, though the divergence of views is not dramatic. Here word level categories are divided into two kinds: **major lexical categories** and **minor lexical categories**. Major lexical categories play a very important role in sentence formation. They differ from minor lexical categories in that they are often assumed to be the heads around which phrases are built. Major lexical categories are Noun, Verb, Adjective, and Preposition. They are exemplified below.

Table 4-1 Examples of some lexical categories

Major lexical categories	Examples
Noun (N)	book, boy, love, sheep
Verb (V)	run, read, play
Adjective (A)	happy, tall, clear
Preposition (P)	about, over, on
Minor lexical categories	Examples
Determiner (Det)	the, a, this, those
Degree word (Deg)	quite, very, more, so
Qualifier (Qual)	often, always, seldom, almost
Auxiliary (Aux)	must, should, can, might
Conjunction (Con)	and, but, or

Word categories are not so clear-cut as shown above because some words such as *love* and *push* can belong to more than one category.

To determine a word's category, three criteria are usually em-

ployed, namely meaning, inflection and distribution. Word categories often bear some relationship with its meaning. For example, nouns typically denote entities such as human beings like *John*, *Mary* and objects like *pen* and *book*. Verbs, characteristically designate action, sensations and states.

The meanings associated with nouns and verbs can be elaborated in various ways. The property or attribute of the entities denoted by nouns can be elaborated by adjectives. For example, when we say *that pretty lady*, we are attributing the property 'pretty' to the lady designated by the noun. Similarly, the properties and attributes of the actions, sensations and states designated by verbs can typically be denoted by adverbs. For example, in *Jenny left quietly* the adverb *quietly* indicates the manner of Jenny's leaving.

However, it is misleading to assume that a word's category can be told straightforward from its meaning. Firstly, nouns such as *dilemma* and *friendship* do not concretely reveal their entities. Secondly, some words such as *love* and *hate* which indicate actions tend to be verbs but they can also be used as nouns. Thirdly, words with the same or similar meanings sometimes belong to different word categories. For example, *be aware of* and *know about* can have the same meaning but they belong to different word categories.

Thus, to determine a word's category by its meaning only is often not reliable. Sometimes we have to resort to other criteria. The second criterion to determine a word's category is inflection. Words of different categories take different inflections. Such nouns as *boy* and *desk* take the plural affix *-s*. Verbs such as *work* and *help* take past tense affix *-ed* and progressive affix *-ing*. And adjectives like *quiet* and *clever* take comparative affix *-er* and superlative affix *-est*. Although inflection is very helpful in determining a word's category, it does not always suffice. Some words do not take inflections. For example, nouns like *moisture*, *fog*, do not usually take plural suffix *-s* and adjectives like *frequent*, *intelligent* do not take comparative and superlative affixes *-er* and *-est*.

The last and more reliable criterion of determining a word's category is its distribution. That is what type of elements can co-

occur with a certain word. For example, nouns can typically appear with a determiner like *the girl* and *a card*, verbs with an auxiliary such as *should stay* and *will go*, and adjectives with a degree word such as *very cool* and *too bright*.

Thus, a word's distributional facts together with information about its meaning and inflectional capabilities help identify its syntactic category.

4.2.2. Phrase categories and their structures

Syntactic units that are built around a certain word category are called phrases, the category of which is determined by the word category around which the phrase is built. If the word around which the phrase is built is a noun, then the phrase is a noun phrase. If the word is a verb, then the phrase is a verb phrase and so on. In English syntactic analysis, the most commonly recognized and discussed phrasal categories are noun phrase (NP), verb phrase (VP), adjective phrase (AP) and prepositional phrase (PP).

Phrases can consist of just one word, but more often they contain other elements as well, e.g.

[NP the pretty girl]
 [VP often dream]
 [AP very pessimistic]
 [PP mainly about]

Whether formed of one or more than one word, they consist of two levels, phrase level and word level as exemplified below,

NP	VP	AP	PP	←	phrase level
N	V	A	P	←	word level

Phrases that are formed of more than one word usually contain the following elements: **head**, **specifier** and **complement**. The word around which a phrase is formed is termed **head**. The words on the left side of the heads are said to function as **specifiers**. The words

on the right side of the heads are **complements**. This will be further discussed in **Section 4.4**.

4.3 Phrase structure rule

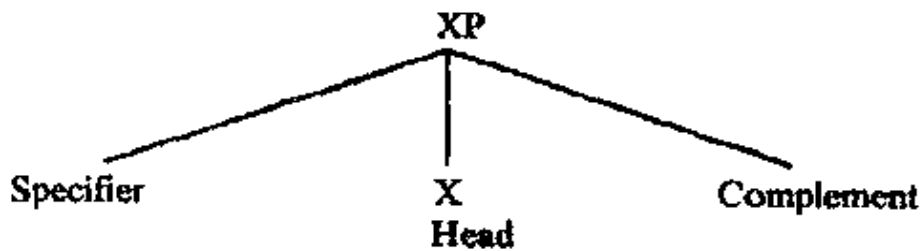
As we have seen, a certain word can only concur with certain other words. There must be certain grammatical mechanism that ensures the appropriate positions that specifiers, heads, and complements occupy in phrase structure. Such special type of grammatical mechanism that regulates the arrangement of elements that make up a phrase is called a **phrase structure rule**. The phrase structural rule for NP, VP, AP, and PP can be written as follows:

- NP $\rightarrow$ (Det) N (PP) ...
- VP $\rightarrow$ (Qual) V (NP) ...
- AP $\rightarrow$ (Deg) A (PP) ...
- PP $\rightarrow$ (Deg) P (NP) ...

The arrow can be read as 'consists of' or 'branches into'. The parentheses mean that the element in them can be omitted and the three dots in each rule indicate that other complement options are available. The first of the above rules states that an NP can consist of a determiner, an N head, and a PP complement; the second rule captures the fact that a VP can be composed of a qualifier, a V, and an NP complement; and so on. As indicated in the rule, both specifiers and complements are optional. Thus a phrase can simply be just a head.

4.3.1 XP rule

We can find very obvious structural similarities among the above rules. In all four phrases, the specifier is attached at the top level to the left of head while the complement is attached to the right. These similarities can be summarized with the help of the template below, in which X stands for the head N, V, A or P.

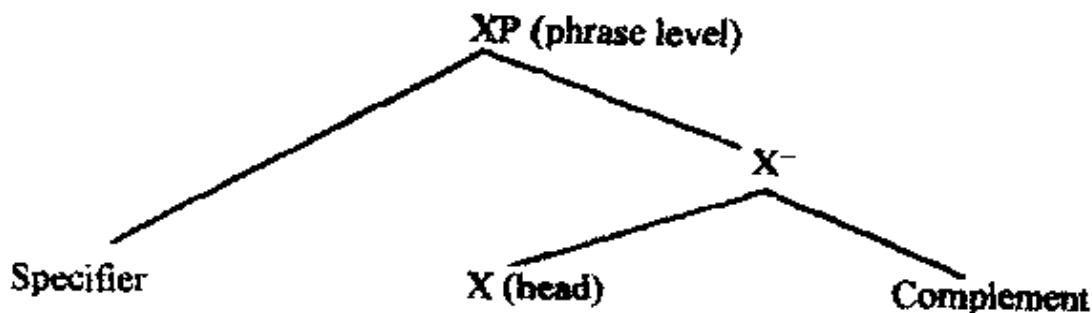
Figure 4-1

To capture the appropriate placement of specifiers, heads and complements, we can formulate a single general phrasal structural rule as below instead of four separate rules.

The XP rule: $XP \rightarrow (\text{specifier}) X (\text{complement})$

4.3.2 X^- Theory

The template indicated in 4.3.1, however, is somewhat of a simplification since complements and heads may be attached to a level of structure between the word level and phrase level. The intermediate level formed by the head and the complement between word level and phrase level is represented by the symbol X^- (pronounced as X bar). Thus the XP template can be modified as follows.

Figure 4-2

In order to accommodate these new three-level structures, it is necessary to replace the original XP rule by the two-phrase structure rules below.

- $XP \rightarrow (\text{Specifier}) X^-$.
- $X^- \rightarrow X (\text{complement})$

The first rule stipulates that XP categories such as NP and VP consist of an optional specifier (a determiner, a qualifier, and so forth) and an X^- . The second rule states that an X^- consists of a

head, X, and any complements.

Because three-level structures take up a considerable amount of space and can be tedious to draw, it is common practice to eliminate the intermediate level of phrase structure in most published works unless it is absolutely essential to the point being discussed. To do more complicated syntactic analysis, it is necessary to be familiar with the X⁻ level.

4.3.3 Coordination rule

So far we have been concentrating on phrases that consist of specifiers, heads, and complements. English contains other types of structures as well. For example, some structures are formed by joining two or more elements of the same type with the help of a conjunction such as *and* or *or*. Such phrases are called **coordinate structures** and this phenomenon is known as **coordination**. Coordination exhibits four important properties.

First, there is no limit on the number of coordinated categories that can appear prior to the conjunction. Second, a category at any level (a head or an entire XP) can be coordinated. Third, coordinated categories must be of the same type. Fourth, the category type of the coordinate phrase is identical to the category type of the elements being conjoined. The **coordination rule** can be formulated as below:

$$X \rightarrow X * \text{Con } X$$

In this rule the symbol X stands for 'a category at any structural level', indicating that either an X or an XP can be coordinated. The asterisk (*) indicates that one or more categories can occur to the left of the Con (= conjunction).

4.4 Phrase elements

As shown earlier, a phrase can contain specifiers and complements besides the head. In this section, we are going to introduce each of

them and revise the XP rule to accommodate the more complex phrase structures.

4.4.1 Specifiers

Specifiers have both special semantic and syntactic roles. Semantically, they help make more precise the meaning of the head. Syntactically, they typically mark a phrase boundary. In English specifiers occur at the left boundary of their respective phrases. They are attached to the top level of phrase structures, to the left of the head.

The syntactic category of the specifier differs depending on the category of the head. Determiners serve as the specifiers of Ns while qualifiers typically function as the specifiers of Vs and degree words as the specifiers of As and sometimes Ps.

4.4.2 Complements

As we have seen, complements are themselves phrases and provide information about entities and locations whose existence is implied by the meaning of the head. They are attached to the right of the head in English. For example,

(4-1) a story about a sentimental girl

The information about a word's complement is included in the head and termed **subcategorization**. Subcategorization information together with the phrase structure rules ensures that lexical items appear in the appropriate types of tree structures. A certain lexical item requires a certain type of complement. For example, verbs like *appear* can occur without any complement, *cut* can occur with an NP complement and some heads in English such as *put* can take more than one complement. Therefore, we can revise our earlier XP rule as follows, using an asterisk after the complement to indicate that one or more of these elements is permitted.

The XP Rule (revised)

$XP \rightarrow (\text{Specifier}) X (\text{Complement}^*)$

This rule also captures the simple but important fact that complements, however many there are, occur to the right of the head in English.

In English, sometimes a sentence-like construction functions as a complement such as the one below.

(4-2) Miss Hebert believes *that she will win*.

The italicized part in the above sentence is the complement of the verb *believe*. It is a sentence itself but not an independent one since it is introduced by a conjunction and functions as a phrase. Words which introduce the sentence complement are termed **complementizers** (shortened as Cs). The sentence introduced by the complementizer is called a **complement clause**. Thus the whole italicized part in the above sentence is called a **complement phrase** (shortened as CP) and the construction in which the complement phrase is embedded is called **matrix clause**.

There is no limit on the number of embedded clauses that can occur in a sentence since each complement can contain a verb that itself permits a complement CP.

Of course, not all verbs can take a CP complement. Words that can take CP are not verbs alone; As, Ns and Ps can all take CP. They are exemplified in the following table.

Table 4-2 Examples of some As, Ns, and Ps permitting CP complements

Items	Heads	Examples
Adjectives	afraid, certain, aware	I was afraid <i>that nobody would believe me</i> .
Nouns	fact, claim, belief	She can't believe the fact <i>that she would fail in the exam</i> .
Prepositions	over, about	They argued over <i>whether she had come to class</i> .

4.4.3 Modifiers

Still another kind of element we have not touched upon so far is

modifiers, which specify optionally expressible properties of heads. Although all lexical categories can have modifiers, we will focus here on the types of categories that can modify Ns and Vs.

The most common modifiers of Ns are adjective phrases and those of verbs are adverb phrases and prepositional phrases which describe manner and time. Modifiers in English vary in terms of their position with respect to the head. They can be summarized below.

Table 4–3 Modifier position in English

Modifier	Position	Example
AP	precedes the head	a very <i>careful</i> girl
PP	follows the head	open <i>with care</i>
AdvP	precedes or follows the head	read <i>carefully</i> ; <i>carefully</i> read

To make modifiers fit into phrase structure, we can expand our original XP rule into the following so that it allows the various options.

The Expanded XP rule:

$XP \rightarrow (\text{Spec}) (\text{Mod}) X (\text{Complement}^*) (\text{Mod})$

This rule allows a modifier to occur either before the head or after it. Where there is a complement, a modifier that occurs after the head will normally occur to the right of the complement as well.

4.5 Sentences (The S rule)

The syntactic analysis we have discussed so far is restricted to phrases. Now we will turn to the largest unit of syntactic analysis — the sentence (shortened as S). Sentences are traditionally taken to be the product of the rule below,

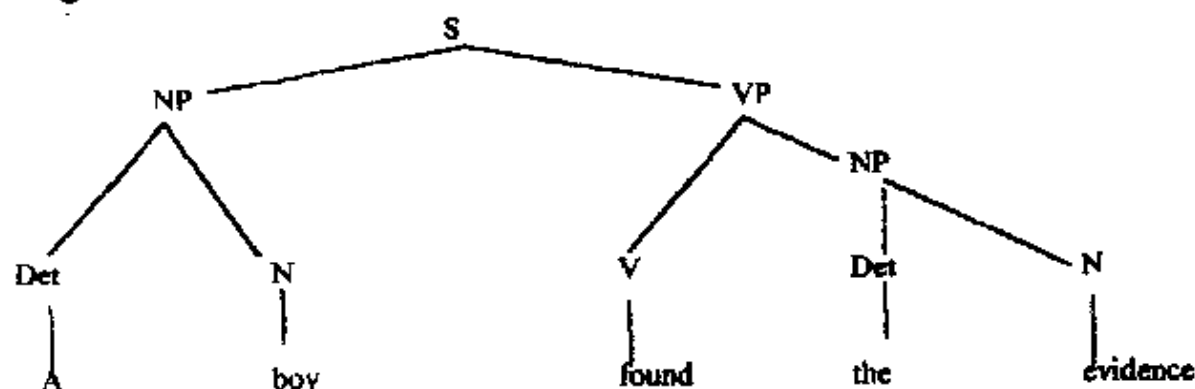
The S rule:

$S \rightarrow NP VP$

which combines an NP (often called the subject) with a VP to yield

a sentence such as the one below.

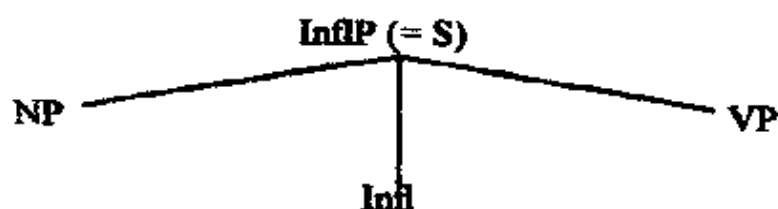
Figure 4-3



This analysis is based on the assumption that unlike other phrases, which contains a head, a complement and a specifier, S does not have an internal structure.

Many linguists nowadays believe that sentences, like other phrases, also have their own heads. They take an abstract category inflection (dubbed 'Infl') as their heads, which indicates the sentence's tense and agreement. Like other phrases, Infl takes an NP (the subject) as its specifier and a VP category as its complement. According to this idea, sentences have the same internal structure as other phrases and are consistent with the XP rule outlined earlier. Thus, there is no need for the special S rule. The structure of S can be depicted as below.

Figure 4-4



Sentence head — Infl position can be taken by an abstract category encoded in a verb which indicates the sentence's tense or an auxiliary as shown below.

Figure 4-5

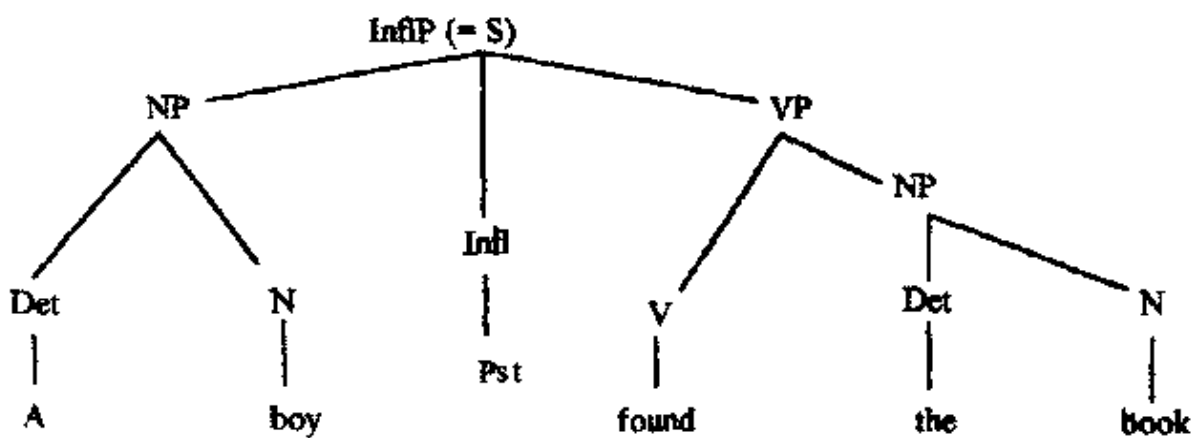
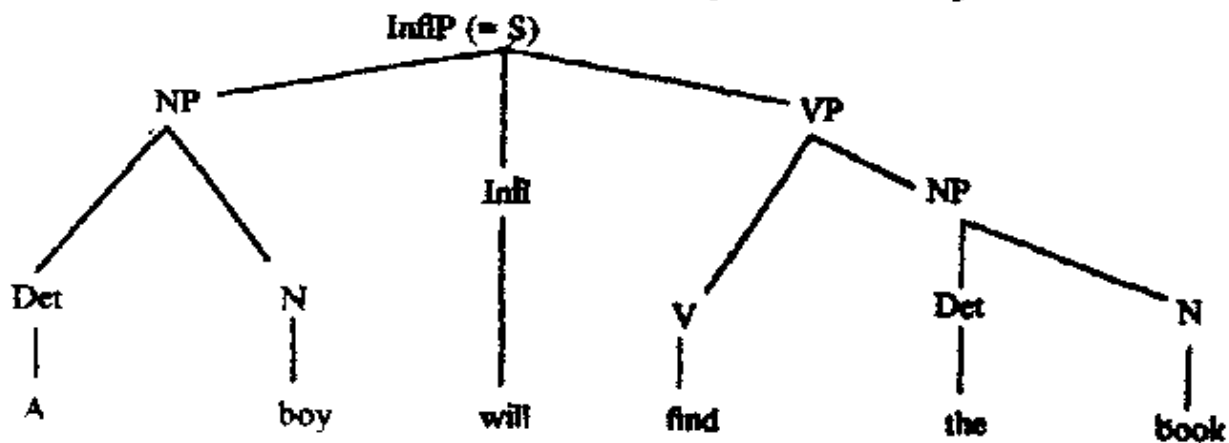
Infl realized by a tense label

Figure 4-6

Infl position realized by an auxiliary

4.6 Transformations

Thus far the phrase structure rule has provided explanations of how different phrases are formed but it cannot entirely satisfactorily describe some other language phenomena such as yes-no question, *wh*-question and passive voice, which involve a syntactic movement. In this section we will explain these phenomena and discuss the changes that must be made to accommodate them.

4.6.1 Auxiliary movement

According to the XP rule, the auxiliary is the head of a sentence

which takes a VP category as its complement on the right and NP, the subject, as its specifier on the left. However, yes-no questions have an auxiliary verb to the left of the subject. How does the word order come about?

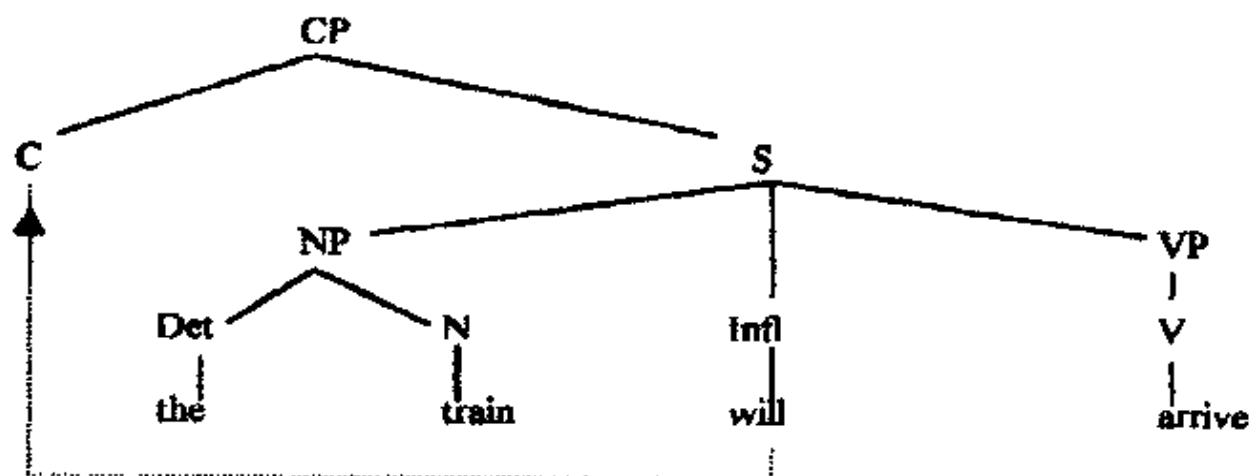
The yes-no question structures being considered are built in two steps. In the first step, the usual XP rule is used to form a structure in which the auxiliary occupies its normal position in Infl, between the subject and the VP. The second step in forming a yes-no question requires a **transformation**, a special type of rule that can move an element from one position to another. In the case we are considering, a transformation known as **inversion** moves the auxiliary from the Infl position to a position to the left of the subject. The transformation can be formulated as follows.

Inversion :

Move Infl to the left of the subject NP.

This rule, however, does not tell what position the auxiliary verb is moved into. The position the auxiliary occupies is the same as the position that a complementizer occupies. This naturally prompts us to assume that all Ss occur within larger CPs, whether they are embedded or not. In yes-no question the Infl is moved to the C position which is empty as shown below.

Figure 4-7



So, the inversion transformation can be reformulated as fol-

lows.

Inversion (revised):

Move Infl to C.

If the CP is embedded in a larger sentence or matrix clause, it can contain an overt complementizer such as *that* or *whether*, which occurs in the C position. If we assume that there can be only one element in each position in a tree structure, complementizers and auxiliaries are mutually exclusive. In other words, if both complementizers and inverted auxiliaries occupy the head C position of CP, we would expect to find that a clause can be introduced by either a complementizer or an inverted auxiliary, but not by the two at the same time. Thus there should be no room for the moved auxiliary under the C label. So inversion in CPs is not applicable in these cases. This shows why the following sentence is ungrammatical.

Figure 4–8

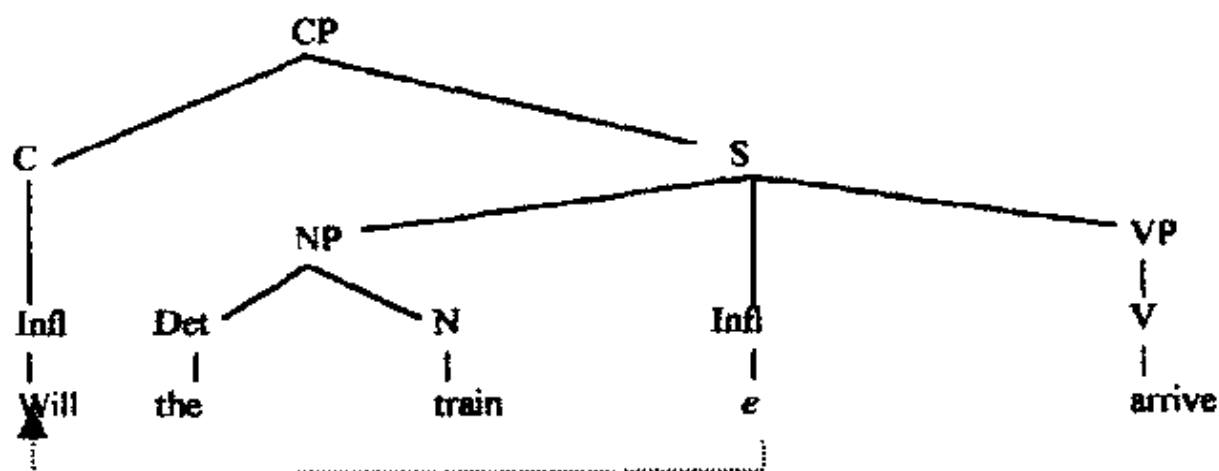
*The teacher wonders [CP if-should his student stay].



A transformation can do no more than change an element's position. It does not change the categories of words and it cannot eliminate any part of the structural configuration created by the phrase structure rules. Thus, *will* retains its Infl label even though it is moved into the C position, and the position that it formerly occupied remains in the tree structure. Marked by the symbol *e* ('empty') and called a **trace**, it records the fact that the moved element comes from the head position within S as shown below.

From the above tree diagram, we can see that the auxiliary moves from the head Infl position in Infl P into the head C position in CP. Such type of inversion operation involving the movement of a word from the head position in one phrase into the head position in another is also known as **head movement**.

Figure 4-9



4.6.2 Do insertion

To form a yes-no question which contains an overt Infl form is easy as has been shown above. Then, how to form a yes-no question that does not contain an overt Infl such as the one below? There is nothing for the inversion transformation to move.

(4-3) Birds fly.

Linguists circumvents this problem by adding the special auxiliary verb *do*. So we can formulate an insertion rule as follows.

Do insertion

Insert interrogative *do* into an empty Infl position.

After the auxiliary *do* is inserted into the Infl position, the inversion transformation can be made by moving the interrogative *do* into the C position. The procedures can be diagrammed below.

Figure 4-10

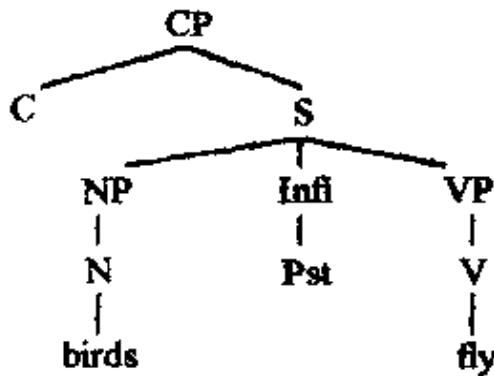


Figure 4-11

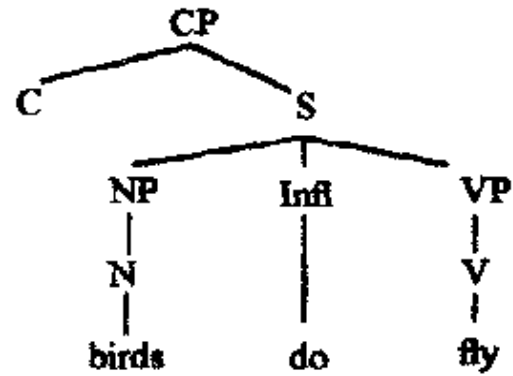
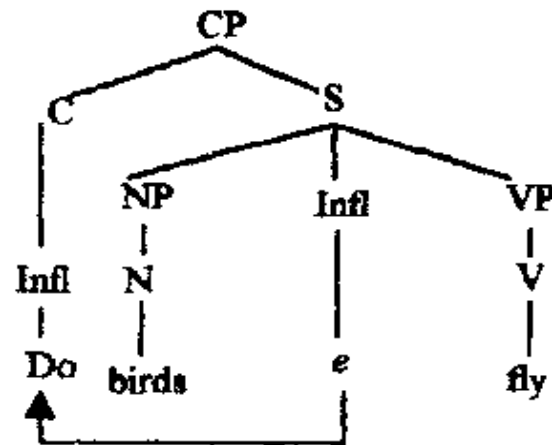


Figure 4-12



4.6.3 Deep structure and surface structure

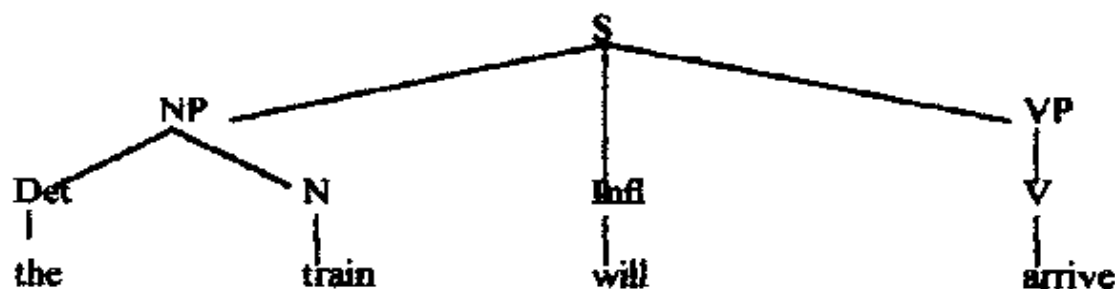
Before we move to the more complex transformation, it will be easier if we have the basic knowledge about surface structure and deep structure.

The preceding examples show that at least some sentences must be analysed with the help of two distinct types of mechanisms — the XP rule, which determines the internal structure of phrasal categories, and transformations which can modify these tree structures by moving an element from one position to another. This analysis suggests that there are two levels of syntactic structure. The first, formed by the XP rule in accordance with the head's subcategorization properties, is called **deep structure** (or **D-structure**). The second, corresponding to the final syntactic form of the sentence which results from appropriate transformations, is called **sur-**

face structure (or S-structure).

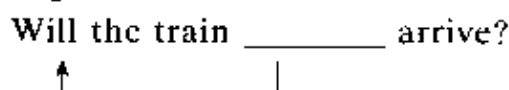
The deep structure for the question *Will the train arrive?* is given below.

Figure 4-13

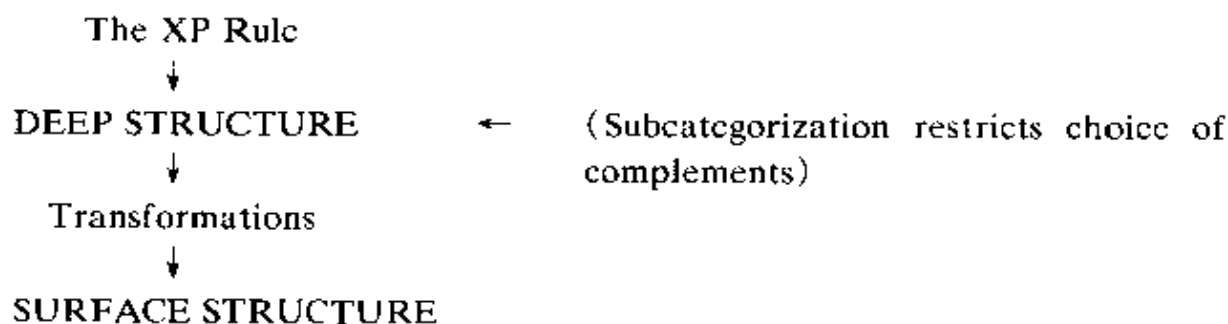


The surface structure for the question pattern formed by applying the inversion transformation is given below.

Figure 4-14



The organization of the syntactic component of the grammar can be depicted below.



As this diagram shows, to transform a sentence from deep structure to surface structure, the grammar makes use of different syntactic mechanisms. Some of these mechanisms are responsible for the phrasal structures (the XP rule), others for the determination of a head's possible complements (subcategorization), and still others for the movement of categories within syntactic structure (transformations).

It must be pointed out that when we say a sentence has two levels of structure (D-structure and S-structure) we do not mean that

the representations of these two levels must be different. When transformations are not necessary, the representations of these two levels look the same.

4.6.4 *Wh* Movement

In English another kind of questions beginning with a *wh*-word are called *wh* questions such as the ones below.

(4 – 4) **What languages** can you speak?

(4 – 5) **What** can you talk about?

How do these sentences come about? What is their deep structure? To answer the question, it had better to understand the role the bold words before the auxiliary play. It seems obvious that the bold word(s) in each sentence function(s) as the complement of the verb or preposition at the end of the sentence. One piece of evidence leading to this conclusion is the fact that without the bold words the sentences are somewhat incomplete. Thus the deep structures of the above sentences are

(4 – 6) *you can speak what language*

(4 – 7) *you can talk about what*

To convert these deep structures into the corresponding surface structures, we need a transformation that will move the *wh* phrase from its position in deep structure to a position at the beginning of the sentence. This transformation is called ***Wh* Movement** which can be formulated below.

***Wh* Movement**

Move the *wh* phrase to the beginning of the sentence.

By applying *Wh* Movement and inversion to the deep structure, we can form the desired question structure.

Figure 4-15

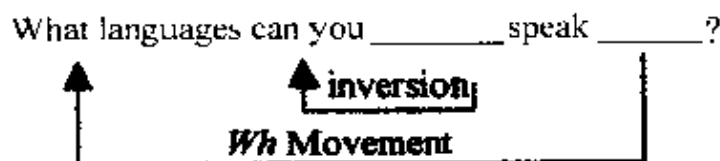
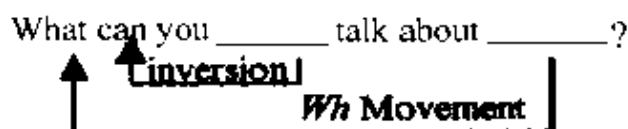


Figure 4-16



Then may come the question: To what precise place should the *wh* phrase be moved? Given that the whole sentence is a CP and the moved auxiliary is located in the C position, it seems reasonable to conclude that the fronted *wh* phrase is in the specifier position of CP. We therefore reformulate the *Wh Movement* transformation as follows.

***Wh Movement* (revised):**

Move a *wh* phrase to the specifier position under CP.

Like other transformations, *Wh Movement* cannot eliminate any part of the structural configuration formed by the phrase structure rules. The position occupied by the *wh* phrase in deep structure is therefore not lost. Rather, it remains as a trace, indicating that the moved element corresponds to the complement of the verb *speak* and the preposition *about* in the above examples.

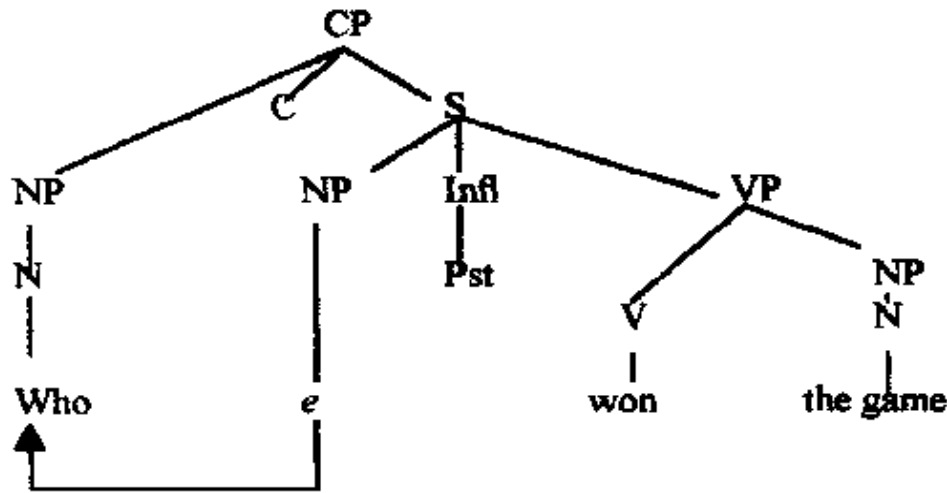
What we have discussed is the case in which *wh* phrase originates as complement of a verb or preposition. Now we shall discuss the phenomenon when *wh* phrase acts as a subject such as the example below.

(4-8) Who won the game?

In this sentence, the *wh* word originates in the subject position. Thus, when it moves to the specifier position within the CP, the actual order of the words in the sentence does not change. This

movement can be shown below.

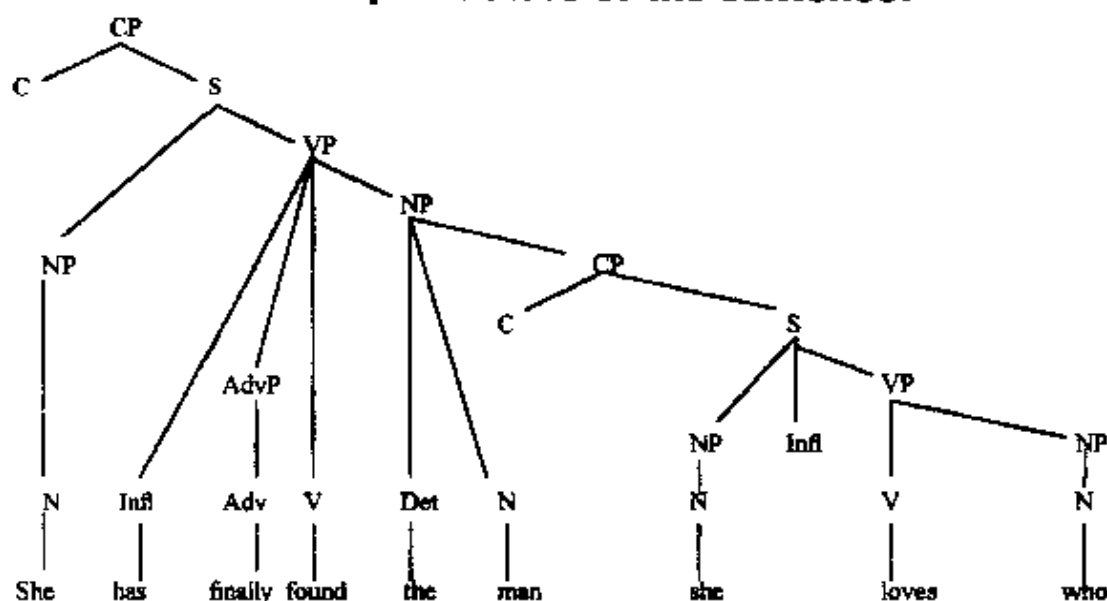
Figure 4-17



Wh Movement can apply not only to *wh* questions but also to relative clauses because relative clause structures are very similar to embedded *wh* question. Relative clauses can be regarded as part of the NP which they modify because the N head and the relative clause can be regarded as a syntactic unit and replaced by a pronoun. The relative clause itself can be regarded as a CP which modifies the head N. The transformation of the sentence "She has finally found the man whom she loves" from deep structure to surface structure can be depicted in the following tree diagrams below.

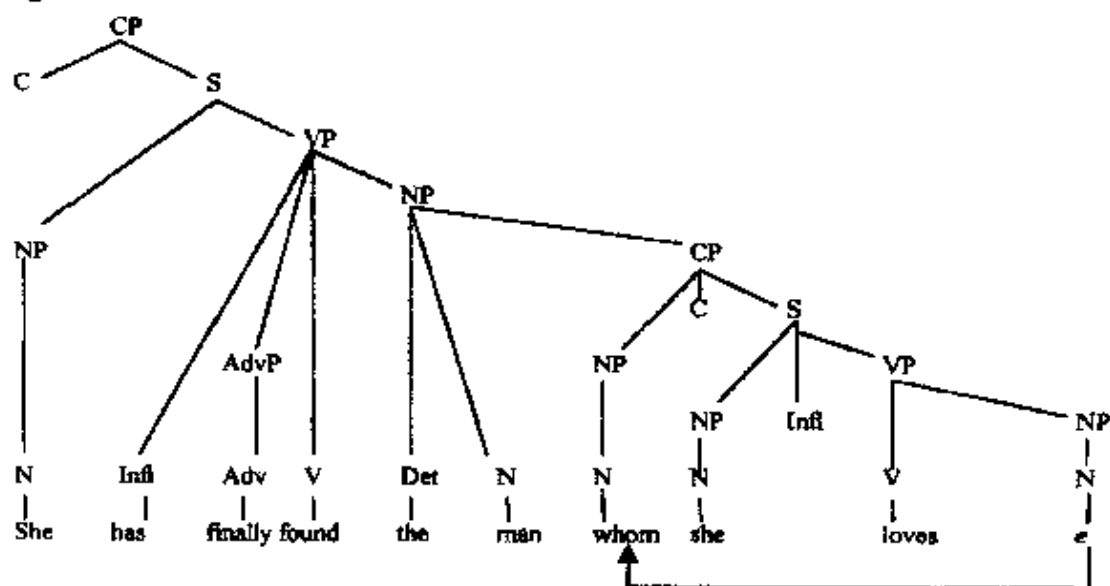
Figure 4-18

The deep structure of the sentence.



After the application of the *Wh* Movement rule, the *wh* phrase has moved to the specifier position within the CP. The surface structure of the sentence can be depicted below.

Figure 4-19



A similar analysis is applicable to other types of relative clause structures in which the *wh* word originates in the subject position as the sentence below.

(4-9) She has finally found the man who loves her.

The deep structure for the sentence corresponds to the structure below.

Figure 4–20

She has finally found the man [CP|Infl who loves her]].

Like other *wh* words, *who* subsequently moves to the specifier position within CP even though the actual word order of the words in the sentence does not change as a result of this movement, as is shown below.

Figure 4–21

She has finally found the man [CP who InflP _____ loves her]].

 An arrow points from the blank space in the InflP to the word 'who' in the CP specifier position.

4.6.5 Move α and constraints on transformations

Just as there is a general rule for all phrase structure rules — the XP rule, so there is a general rule for all the movement rules. This general rule is referred to as **Move α** , where ‘alpha’ is a cover term for any element that can be moved from one place to another.

Movement, however, is not unconstrained. It has been shown that only certain categories are targeted by movement rules, and that there are limits on how far elements can be moved. To illustrate this, the following example is provided.

a) Inversion can move an auxiliary from the Infl to the nearest C position, but not to a more distant C position.

Figure 4–22

[CP[InflP Geoffrey should know [CP that the train might be late]],
 [Deep structure]

Figure 4–23

[CP should [InflP Geoffrey ____ know CP whether the train might be

 An arrow points from the blank space in the InflP to the word 'should' in the CP specifier position.
 late]]]. [Surface structure]

Figure 4–24

^[CP Might [InflP Geoffrey should know [CP whether the train ____

 An arrow points from the blank space in the InflP to the word 'Might' in the CP specifier position.

be late]]]. [Surface structure]

b) No element may be removed from a coordinate structure.

Figure 4-25

The little girl will tell us [a story or a joke].

Figure 4-26

* What will the little girl tell us [a story or _____]?

↑ _____ }

In this chapter we have first introduced word categories and phrase categories. Then we have focused on some of the fundamental mechanisms employed in the analysis of sentence formation. These include **phrase structure rules** that determine the architecture of a sentence's **deep structure**, **subcategorization** information that ensures a match between **heads** and the **complements** with which they appear in syntactic structure, and **transformations** that can modify **deep structure** in various ways to produce a **surface structure**. Taken together, they make up an important part of our overall linguistic competence which enables us to combine words into sentences in endlessly novel ways.

Revision Exercises:

1. Indicate the category of each word in the following sentences.
 - a) The old lady suddenly left.
 - b) The car stopped at the end of the road.
 - c) The snow might have blocked the road.
 - d) He never appears quite mature.
2. The following phrases include a head, a complement, and a specifier. Draw the appropriate tree structure for each.
 - a) full of people
 - b) a story about a sentimental girl
 - c) often read detective stories
 - d) the argument against the proposals
 - e) move towards the window

-
3. Draw phrase structure trees for each of the following sentences.
 - a) The jet landed.
 - b) Marie became very ill.
 - c) What will you talk about?
 - d) The apple might hit the man.
 - e) He often reads detective stories.
 4. The following sentences contain modifiers of various types. For each sentence, first identify the modifier(s), then draw the tree structures.
 - a) A frightened passenger landed the crippled airplane.
 - b) A huge moon hung in the black sky.
 - c) An unusual event occurred before the meeting.
 - d) A quaint old house appeared on the grassy hill.
 5. The following sentences all contain conjoined categories. Draw a tree structure for each of the sentences.
 - a) Jim has washed the dirty shirts and pants.
 - b) Helen put on her clothes and went out.
 - c) Mary is fond of literature but tired of statistics.
 - d) The detective went out and the mysterious man came in.
 - e) Crusoe knows that spring will come and the snow will melt.
 6. The following sentences all contain embedded clauses that function as complements of a verb, an adjective, a preposition or a noun. Draw a tree structure for each sentence.
 - a) You know that I hate war.
 - b) He said that Tom asked whether the class was over.
 - c) Gerry can't believe the fact that Anna flunked the English exam.
 - d) Chris was happy that his father bought him a Rolls-Royce.
 - e) The children argued over whether bats had wings.
 7. Each of the following sentences contains a relative clause. Draw the deep structure and the surface structure trees for each of these sentences.
 - a) The essay that he wrote was too long.
 - b) The dog that he keeps bites.
 - c) Herbert found the man she loved.
 - d) The girl whom he often quarrels with majors in linguistics.

8. The derivations of the following sentences involve the inversion transformation. Give the deep structure and the surface structure of each of these sentences.
- a) Would you come tomorrow?
 - b) Can you pass me the newspaper?
 - c) Should the student report the incident?
 - d) What did you eat for lunch?
 - e) Who should this be reported to?
 - f) What was Helen bringing to the party?

5 SEMANTICS

5.1 What is semantics?

Semantics can be simply defined as the study of meaning. This definition naturally leads to the question: what is meaning? Meaning is central to the study of communication, but the question of what meaning really is is difficult to answer. Even linguists do not agree among themselves as to what meaning is. And what makes the matter even more complicated is that philosophers, psychologists, and sociologists all claim a deep interest in the study of meaning, although they differ in their focus of interest. The philosophers are interested in understanding the relations between linguistic expressions and what they refer to in the real world, and in evaluating the truth value of linguistic expressions. The psychologists focus their interest on understanding the workings of the human mind through language. This is why it is not surprising to find ten books all bearing the title “Semantics” but talking about different things. In our discussion, we will limit ourselves to the study of meaning from a linguistic point of view.

5.2 Some views concerning the study of meaning

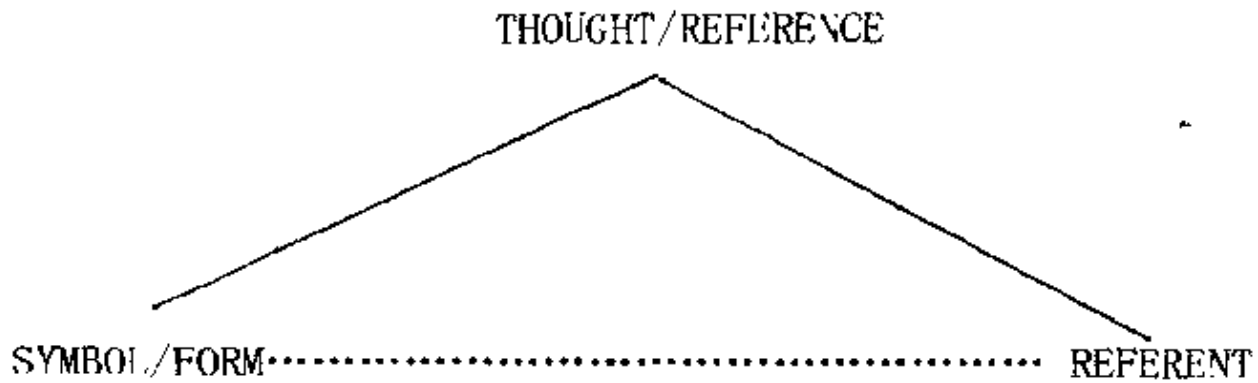
5.2.1 The naming theory

One of the oldest notions concerning meaning, and also the most primitive one, was the **naming theory** proposed by the ancient Greek scholar Plato. According to this theory, the linguistic forms or symbols, in other words, the words used in a language are simply labels of the objects they stand for. So words are just names or labels for things.

The limitations of this theory are obvious. First of all, this theory seems applicable to nouns only, but verbs, adjectives, and adverbs such as "*think*", "*hard*", "*slowly*" are definitely not labels of objects. Besides, within the category of nouns, there are nouns which denote things that do not exist in the real world at all such as "*ghost*", "*dragon*", and "*unicorn*", and also nouns that do not refer to physical objects, but abstract notions such as "*joy*", "*impulse*".

5.2.2 The conceptualist view

A more sophisticated and seemingly more plausible view than naming is one that relates words and things through the mediation of concepts of the mind. This **conceptualist view** has been held by some philosophers and linguists from ancient times. This view holds that there is no direct link between a linguistic form and what it refers to (i.e., between language and the real world); rather, in the interpretation of meaning they are linked through the mediation of concepts in the mind. This is best illustrated by the classic **semantic triangle** or **triangle of significance** suggested by Ogden and Richards:



In the diagram, the **SYMBOL** or **FORM** refers to the linguistic elements (words, phrases), the **REFERENT** refers to the object in the world of experience, and **THOUGHT** or **REFERENCE** refers to concept. For example, The word “dog” is directly associated with a certain concept in our mind, i.e., what a “dog” is like, but it is not directly linked to that particular dog mentioned in the sentence “The dog over there looks unfriendly”, i.e., the referent in this particular case. Thus, the symbol or a word signifies “things” by virtue of the concept associated with the form of the word in the minds of the speaker of the language; and the concept looked at from this point of view is the meaning of the word.

This theory avoids many of the problems the naming theory has encountered, but it also raises a completely new problem of its own. For what is precisely the link between the symbol and the concept remains unclarified. Some scholars have suggested that the link is simply a psychological one — when we think of a name, we think of a concept. But this does not answer the question satisfactorily, for it is not clear what exactly is meant by “thinking of a concept.” People do not actually try to see the image of something in their mind’s eye every time they come across a linguistic symbol.

5.2.3 Contextualism

During the period roughly from 1930 to 1960, linguists gave pre-eminence to the empirical or observable aspect instead of the theoretical aspect in their scientific investigation of meaning. This tendency manifested itself in an attempt to base meaning on context. It has attracted those linguists who have been working toward the

ideal of scientific objectivity. They hold that meaning should be studied in terms of situation, use, context — elements closely linked with language behaviour. A representative of this approach was J. R. Firth, the leading British linguist of the period. He held the view that 'We shall know a word by the company it keeps,' and that 'By regarding words as acts, events, habits, we limit our inquiry to what is objective in the group life of our fellows.' Firth had been influenced by the works of Malinowski, a Polish anthropologist and of Wittgenstein, a German philosopher. They believed respectively that "language should be treated as a mode of action, not an instrument of reflection" and that "For a large class of cases ... the meaning of a word is its use in the language."

The contextualist view of meaning is based on the presumption that one can derive meaning from or reduce meaning to observable contexts. Two kinds of context are recognized: the situational context and the linguistic context.

Every utterance occurs in a particular spatiotemporal situation, the main components of which include, apart from the place and time of the utterance, the speaker and the hearer, the actions they are performing at the time, the various objects and events existent in the situation. The linguistic context, sometimes known as co-text, is concerned with the probability of a word's co-occurrence or collocation with another word, which forms part of the "meaning" of the word, and also with the part of text that precedes and follows a particular utterance.

For example, the meaning of the word "black" differs in the two collocations of "black hair" and "black coffee". And the meaning of the word "seal" in the sentence "The seal could not be found" cannot be determined unless the context in which the sentence occurs is restored.

5.2.4 Behaviorism

The contextualist view was further strengthened by Bloomfield, who drew on behaviorist psychology when trying to define the meaning of linguistic forms. Behaviorists attempted to define the

meaning of a language form as the “situation in which the speaker utters it and the response it calls forth in the hearer.” (Bloomfield, 1933) This theory, somewhat close to contextualism, is linked with psychological interest. This view of meaning proposed by Bloomfield is illustrated by his story about Jack and Jill, represented by the figure below. Bloomfield argued that meaning consists in the relation between speech indicated by the small letters $r \cdots \cdots s$ and the practical events represented by the capitalized letters S and R that precede and follow them respectively:



When Jill sees an apple and wants to have it, she has a physical stimulus, (represented by the capital letter S), which gives rise to a verbal response (r) to Jill. For instance, she might say to Jack “I’m thirsty”. What she says results in a verbal stimulus to Jack (represented by the small letter s). This stimulus, in its turn, leads to a non-verbal response from Jack, such as picking the apple for her.

5.3 Lexical meaning

5.3.1 Sense and reference

Sense and reference are two terms often encountered in the study of word meaning. They are two related but different aspects of meaning.

Sense is concerned with the inherent meaning of the linguistic form. It is the collection of all the features of the linguistic form; it is abstract and de-contextualized. It is the aspect of meaning dictionary compilers are interested in. For example, the word “dog” is given the definition “ a domesticated canine mammal, occurring in many breeds that show a great variety in size and form”. (Collins Dictionary of the English Language, 1979) This does not refer to any particular dog that exists in the real world, but applies to any

animal that meets the features described in the definition. So this is the sense of the word "dog".

Reference means what a linguistic form refers to in the real, physical world; it deals with the relationship between the linguistic element and the non-linguistic world of experience. If we say "The dog is barking", we must be talking about a certain dog existent in the situation; the word "dog" refers to a dog known to both the speaker and the hearer. This is the reference of the word "dog" in this particular situation.

Obviously, linguistic forms having the same sense may have different references in different situations. On the other hand, there are also occasions, when linguistic forms with the same reference might differ in sense. A very good example is the two expressions "morning star" and "evening star". These two differ in sense but as a matter of fact, what they refer to is the same; the very same star that we see in the sky.

5.3.2 Major sense relations

5.3.2.1 Synonymy

Synonymy refers to the sameness or close similarity of meaning. Words that are close in meaning are called **synonyms**.

English is rich in synonyms for historical reasons. In the English vocabulary there are two categories of words: native words and borrowed (loan) words. The native words are those that were originally used in the speech of the native inhabitants of the British Isles, i.e., the Anglo-Saxons, although they were actually migrants from the northern part of Europe. Then in its long history of development, the English language has taken in a large number of words from other languages, mostly European languages, such as French, Latin, Greek, Italian, and German. Most of the borrowed words have been naturalized. Therefore, we often find in English pairs, or triplets of words bearing more or less the same meaning. But because of their different origins, there are often subtle differences between these synonyms. Complete synonyms, i.e. synonyms that are mutually substitutable under all circum-

stances, are rare. According to the way they differ, synonyms can be divided into the following groups:

i. Dialectal synonyms — synonyms used in different regional dialects

These are words with more or less the same meaning used in different regional dialects. British English and American English are the two major geographical varieties of the English language. It is not difficult to find examples of saying the same thing by using different words in the two dialects:

British English	American English
autumn	fall
lift	elevator
luggage	baggage
lorry	truck
petrol	gasoline
flat	apartment
windscreen	windshield
torch	flashlight

Then dialectal synonyms can also be found within British English, or American English itself. For example, “girl” is called “lass” or “lassie” in Scottish dialect, and “liquor” is called “whiskey” in Irish dialect.

ii. Stylistic synonyms — synonyms differing in style

Words having the same meaning may differ in style, or degree of formality. In other words, some words tend to be more formal, others casual, and still others neutral in style. Here are some examples:

old man, daddy, dad, father, male parent

start, begin, commence

kid, child, offspring

kick the bucket, pop off, die, pass away, decease

iii. Synonyms that differ in their emotive or evaluative meaning

These are words that bear the same meaning but express different emotions of the user, indicating the attitude or bias of the user

toward what he is talking about. For example, the two words “collaborator” and “accomplice” are synonymous in that they share the meaning of “a person who helps another”, but they differ in that a collaborator helps another in doing something good, while an accomplice helps another in a criminal act. So which word you would use depends on your evaluation of the nature of the activity the person concerned helps in.

iv. Collocational synonyms

Some synonyms differ in their collocation, i.e., in the words they go together with. This is a matter of usage. For example, when we want to say that someone has done something wrong or even criminal, we can use “accuse”, “charge”, “rebuke”, but they are followed by different prepositions — accuse ... of, charge ... with, rebuke ... for. Another example is the word we use to describe food that has gone bad and is not fit for eating. Different adjectives are used for different kinds of food, e.g. rotten tomatoes, addled eggs, rancid bacon or butter, sour milk.

v. Semantically different synonyms

These are synonyms that differ slightly in what they mean. For example, the two words “amaze” and “astound” are very close in meaning to the word “surprise”, but have very subtle differences. While “amaze” suggests confusion and bewilderment, “astound” suggests difficulty in believing.

5.3.2.2 Polysemy

While different words may have the same or similar meaning, the same one word may have more than one meaning. This is what we call **polysemy**, and such a word is called a polysemic word. There are many polysemic words in English. The fact is the more commonly used a word is, the more likely it has acquired more than one meaning. Take the word “table” for example. It is a very common word in English. If we look it up in any dictionary, we will find that it has at least the following seven meanings:

- (1) a piece of furniture
- (2) all the people seated at a table
- (3) the food that is put on a table

- (4) a thin flat piece of stone, metal, wood, etc.
- (5) orderly arrangement of facts, figures, etc.
- (6) part of a machine -tool on which the work is put to be operated on
- (7) a level area, a plateau

Historically speaking, polysemy can be understood as the growth and development of or change in the meaning of words. We assume that at first the form "table" had only one meaning; very likely it referred to a thin piece of stone, or wood. This is called its primary meaning. Later on it gradually came to acquire the other meanings it now represents.

5.3.2.3 Homonymy

Homonymy refers to the phenomenon that words having different meanings have the same form, i. e. , different words are identical in sound or spelling, or in both.

When two words are identical in sound, they are **homophones**. When two words are identical in spelling, they are **homographs**. When two words are identical in both sound and spelling, they are **complete homonyms**. Below are examples of each kind:

Homophones: rain/ reign night/knight piece/ peace leak/leck

Homographs: bow v./bow n. tear v./tear n. lead v./lead n

Complete homonyms : fast adj./fast v. scale n./scale v.

At this stage a question that readily comes to mind is that when two forms are identical both in sound and spelling, how can we tell whether they are two meanings of the same polysemic word, or two complete homonyms? This is an interesting question but difficult to answer. What we can depend on is the etymology of the words in question. A polysemic word is the result of the evolution of the primary meaning of the word. The various meanings of the word are related to some degree, as we have seen in the case of "table" above. Complete homonyms are often brought into being by coincidence. For instance, "ball " meaning "a round object used in games" and "ball" meaning "a large formal social event at which people dance" are complete homonyms. The word "ball" bearing the first meaning is a native English word. It originally existed in

the language. It so happened that in French there existed a word, spelt in the same way, bearing the second meaning. And this word somehow found its way into the English language. The result is that in English today we have the two complete homonyms “ball” and “ball.”

5.3.2.4 Hyponymy

Hyponymy refers to the sense relation between a more general, more inclusive word and a more specific word. The word which is more general in meaning is called the **superordinate**, and the more specific words are called its **hyponyms**. Hyponyms of the same superordinate are **co-hyponyms** to each other, e.g.

Superordinate: flower

Hyponyms: rose, tulip, carnation, lily, morning glory ...

Superordinate: animal

Hyponyms: dog, cat, tiger, lion, wolf, elephant, fox, bear ...

Superordinate: furniture

Hyponyms: bed, table, desk, dresser, wardrobe, settee ...

Hyponymy is a relation of inclusion; in terms of meaning, the superordinate includes all its hyponyms.

5.3.2.5 Antonymy

The term **antonymy** is used for oppositeness of meaning; words that are opposite in meaning are antonyms. We should not be misled into thinking that words contrast each other only on a single dimension; in fact, oppositeness can be found on different dimensions and different kinds of antonyms have been recognized.

i. Gradable antonyms

Some antonyms are gradable because there are often intermediate forms between the two members of a pair. So it is a matter of degree. For example, “old” and “young” are immediately recognized as antonyms, but they stand for two extremes, between which there exist intermediate forms representing differing degrees of being old or young, such as “middle-aged, mature, elderly”. Similarly between “hot” and “cold” there exist varying qualities of

being neither “hot” nor “cold”, such as “cool”, “warm” and “lukewarm”.

ii. Complementary antonyms

A pair of complementary antonyms is characterized by the feature that the denial of one member of the pair implies the assertion of the other. In other words, it is not a matter of degree between two extremes, but a matter of either one or the other. For example, a person can be either “alive” or “dead”, either “male” or “female”; there is no third possibility. Therefore, “alive” and “dead” are a pair of complementary antonyms, and so are “male” and “female”.

iii. Relational opposites

Pairs of words that exhibit the reversal of a relationship between the two items are called relational opposites. For example, if A is the husband of B, then B is the wife of A. So “husband” and “wife” are a pair of relational opposites. Similar relation is found between “father” and “son”, “teacher” and “pupil”, “doctor” and “patient”, “buy” and “sell”, “let” and “rent”, “above” and “below”.

5.4 Sense relations between sentences

As there are certain relations between lexical items, so are there certain relations between sentences and also between constituents of the same sentence. Below are the major ones of such relations, and they are analyzed in terms of truth conditions.

i. X is synonymous with Y.

- e. g. X: He was a bachelor all his life.
Y: He never married all his life.

X: The boy killed the dog.

Y: The dog was killed by the boy.

In terms of truth condition, if X is true, Y is true, and if X is false, Y is false.

ii. X is inconsistent with Y.

- e. g. X: John is married.
Y: John is a bachelor.

X: This is my first visit to your country.

Y: I have been to your country before.

In terms of truth condition, if X is true, Y is false, and if X is false, Y is true.

iii. X entails Y. (Y is an entailment of X.)

- e. g. X: John married a blond heiress.
Y: John married a blond.

X: He has been to France.

Y: He has been to Europe.

Entailment is a relation of inclusion. If X entails Y, then the meaning of X is included in Y.

Analyzing the relation of entailment in terms of truth condition, we come to the following conclusions:

If X is true, Y is necessarily true, e. g. If he has been to France, he must have been to Europe.

If X is false, Y may be true or false, e. g. If he has not been to France, he may have been to Europe or he has not been to Europe.

iv. X presupposes Y. (Y is a prerequisite of X.)

- e. g. X: John's bike needs repairing.
Y: John has a bike.

X: The queen of England is old.

Y: England has a queen.

Analyzing the relation of presupposition in terms of truth condition, we can conclude:

If X is true, Y must be true, e. g. If John's bike needs repairing, John must have a bike.

If X is false, Y is still true, e. g. If John's bike does not need repairing, John still has a bike.

v. X is a contradiction.

When X is a contradiction, it is invariably false, e. g. My unmarried sister is married to a bachelor.

vi. X is semantically anomalous

e.g. The table has bad intentions.

When X is semantically anomalous, it is absurd in the sense that it presupposes a contradiction. The sentence above presupposes “A table can have intentions”, which is obviously absurd.

5.5 Analysis of meaning

5.5.1 Componential analysis —a way to analyze lexical meaning

Componential analysis is a way proposed by the structural semanticists to analyze word meaning. The approach is based upon the belief that the meaning of a word can be dissected into meaning components, called **semantic features**. This is parallel to the way a **phoneme** is analyzed into smaller components called distinctive features. Plus and minus signs are used to indicate whether a certain semantic feature is present or absent in the meaning of a word, and these feature symbols are usually written in capitalized letters. For example, the word “man” is analyzed as comprising the features of +HUMAN, +ADULT, +ANIMATE, +MALE.

One advantage of componential analysis is that by specifying the semantic features of certain words, it will be possible to show how these words are related in meaning. For example, the two words “man” and “woman” share the features of +HUMAN, +ADULT, and +ANIMATE, but differ in the feature of MALE. And the words “man” and “boy” share the features of +HUMAN, +ANIMATE, and +MALE, but differ in the feature of ADULT.

Componential analysis provides an insight into the meaning of words and a way to study the relationships between words that are related in meaning.

5.5.2 Predication analysis —a way to analyze sentence meaning

Before looking at the analysis of sentence meaning, two points about sentence meaning need be clarified.

First, the meaning of a sentence is not the sum total of the meanings of all its components, that is, the meaning of a sentence is not to be worked out by adding up all the meanings of its constituent words. For example, the two sentences: “The dog bit the man” and “The man bit the dog”, though consisting of exactly the same words, differ widely in what they mean. In this respect, a sentence is different from a word, the meaning of which is the sum total of all its components, i. e., its semantic features.

The second thing about sentence meaning is that there are two aspects to sentence meaning: grammatical meaning and semantic meaning.

The grammatical meaning of a sentence refers to its grammaticality, i. e., its grammatical well-formedness. The grammaticality of a sentence is governed by the grammatical rules of the language. With our knowledge of English grammar, we can easily tell that the following sentences are not grammatically well-formed:

- * The dog are chasing the cat.
- * He gave the book me.
- * We will went to Beijing tomorrow.

A certain grammar rule is violated in each of the sentences.

Then whether a sentence is semantically meaningful is governed by rules called **selectional restrictions**, i. e., constraints on what lexical items can go with what others. Some sentences may be grammatically well-formed, i. e., they comply perfectly with the grammar rules of the language, yet they may not be semantically meaningful. The reason is that they contain words which are not supposed to go together, thus violating the selectional restrictions, e. g.

- * Green clouds are sleeping furiously.

* Sincerity shook hands with the black apple.

The two sentences are, grammatically speaking, perfect. They have all the necessary grammatical components of a sentence, and there is no mistake in agreement or tense. But the problem with the first sentence is that no one has ever seen any green clouds, and clouds never sleep, still less, sleep furiously. The problem with the second sentence is that sincerity, being an abstract notion, can not perform the action of shaking hands, and no one ever shakes hands with an apple, still less, a black apple. So in both sentences some selectional restrictions have been violated. This has led to semantic ill-formedness of the sentences.

Linguists have proposed different ways to analyze the meaning of sentences. They might differ in their framework of analysis, but they share the aim to abstract the meaning of sentences. What we are going to introduce briefly is the **predication analysis** proposed by the British linguist G. Leech. In his framework of analysis, the basic unit is called **predication**, which is the abstraction of the meaning of a sentence. This applies to all forms of sentence, including statements, imperative and interrogative forms. A predication consists of **argument(s)** and **predicate**. An argument is a logical participant in a predication, largely identical with the nominal element(s) in a sentence. A predicate is something said about an argument or it states the logical relation linking the arguments in a sentence. For example, the predication of the sentence "Tom smokes" is said to consist of the argument "TOM" and the predicate "SMOKE", and the predication can be written as TOM(SMOKE). As the grammatical form of the sentence does not affect the semantic predication of the sentence, all the following sentences are said to have the same predication:

Tom smokes.

Tom is smoking.

Tom has been smoking.

Tom, smoke!

Does Tom smoke?

Tom does not smoke.

They can all be regarded as the various grammatical realizations of

the same semantic predication : TOM(SMOKE).

Then some sentences contain more than one argument. For example, the sentence “Kids like apples” has two nominal elements “kids” and “apples”, so its predication can be written as KID, APPLE (LIKE). And then in some sentences there is no argument at all, such as those English sentences containing the impersonal “it”, e.g. “It is hot”. “It” in this sentence can not be considered as an argument, and (BE HOT) is the predicate of the predication. According to the number of arguments contained in a predication, we classify the predications into two-place predication (containing two arguments), one-place predication (containing one argument), and no-place predication (containing no argument).

Although predicate and argument are the same kind of unit in terms of the componential make-up of a sentence, they have different roles in the predication. The predicate can be regarded as the main element, for it includes tense, modality, etc. and it may also be said to govern the arguments for it determines the number and nature of the arguments.

Revision exercises:

1. What are the major views concerning the study of meaning?
2. What are the major types of synonyms in English?
3. Explain with examples “homonymy”, “polysemy”, and “hyponymy”.
4. How can words opposite in meaning be classified? To which category does each of the following pairs of antonyms belong?
north/south vacant/occupied literate/illiterate above/below
doctor/patient wide/narrow poor/rich father/daughter
5. Identify the relations between the following pairs of sentences:
Tom’s wife is pregnant. My sister will soon be divorced.
Tom has a wife. My sister is a married woman.
He likes seafood. They are going to have another baby.

He likes crabs.

They have a child.

6. In what way is componential analysis similar to the analysis of phonemes into distinctive features?
7. What is grammaticality? What might make a grammatically meaningful sentence semantically meaningless?
8. Try to analyze the following sentences in terms of predication analysis:

The man sells ice-cream.

Is the baby sleeping?

It is snowing.

The tree grows well.

6 PRAGMATICS

6.1 Some basic notions

6.1.1 Definition

Pragmatics can be defined in various ways. A general definition is that it is the study of how speakers of a language use sentences to effect successful communication. As the process of communication is essentially a process of conveying and understanding meaning in a certain context, pragmatics can also be regarded as a kind of meaning study. Pragmatics is a comparatively new branch of study in the area of linguistics; its development and establishment in the 1960s and 1970s resulted mainly from the expansion of the study of linguistics, especially that of semantics.

In our discussion of semantics, we made mention of several views concerning the study of meaning. One of them is the contextualist view, which places the study of meaning in the context in which language is used. This view proposed in the first half of the 20th century is often considered to be an initial effort to study meaning in a pragmatic sense.

Pragmatics studies such topics as related to language communication, including deixis, speech acts, indirect language, conversation, politeness, cross-cultural communication, and presupposition. In this chapter we will take a brief look at some of them.

6.1.2 Pragmatics vs. semantics

As pragmatics and semantics are both linguistic studies of meaning, then how are they related, and how do they differ?

The publication of Saussure's work *Course in General Linguistics* in the early 20th century marked the beginning of modern linguistics and at the same time laid down the key note for modern linguistic studies, i.e. language should be studied as a self-contained, intrinsic system; any serious study of language cannot afford to investigate the use of language and extra-linguistic factors were not to be considered.

For more than half a century this has been the dominant tradition of linguistic study. This is the spirit in which traditional phonology studied the sounds of language, traditional syntax studied the structure of sentences, and traditional semantics studied meaning. The meaning of language was considered as something intrinsic, and inherent, i.e., a property attached to language itself. Therefore, meanings of words, meanings of sentences were all studied in isolation from language use.

But gradually linguists found that it would be impossible to give an adequate description of meaning if the context of language use was left unconsidered. But once the notion of context was taken into consideration, semantics spilled over into pragmatics. What essentially distinguishes semantics and pragmatics is whether in the study of meaning the context of use is considered. If it is not considered, the study is confined to the area of traditional semantics; if it is considered, the study is being carried out in the area of pragmatics.

6.1.3 Context

The notion of **context** is essential to the pragmatic study of language. It is generally considered as constituted by the knowledge shared by the speaker and the hearer. Various components of shared knowledge have been identified, e.g. knowledge of the language they use, knowledge of what has been said before, knowl-

edge about the world in general, knowledge about the specific situation in which linguistic communication is taking place, and knowledge about each other. Context determines the speaker's use of language and also the hearer's interpretation of what is said to him. Without such knowledge, linguistic communication would not be possible, and without considering such knowledge, linguistic communication cannot be satisfactorily accounted for in a pragmatic sense. Look at the following sentences:

(6-1) How did it go?

(6-2) It is cold in here.

(6-3) It was a hot Christmas day so we went down to the beach in the afternoon and had a good time swimming and surfing.

Sentence (1) might be used in a conversation between two students talking about an examination, or two surgeons talking about an operation, or in some other contexts; (2) might be said by the speaker to ask the hearer to turn on the heater, or leave the place, or to put on more clothes, or to apologize for the poor condition of the room, depending on the situation of context; (3) makes sense only if the hearer has the knowledge that Christmas falls in summer in the southern hemisphere.

6.1.4 Sentence meaning vs. utterance meaning

As has been said before, a sentence is a grammatical concept, and the meaning of a sentence is often studied as the abstract, intrinsic property of the sentence itself in terms of predication. But if we think of a sentence as what people actually utter in the course of communication, it becomes an utterance, and it should be considered in the situation in which it is actually uttered (or used). So it is impossible to tell if "The dog is barking" is a sentence or an utterance. It can be either. It all depends on how we look at it and how we are going to analyze it. If we take it as a grammatical unit and consider it as a self-contained unit in isolation from context, then we are treating it as a sentence. If we take it as something a speaker utters in a certain situation with a certain purpose, then we are

treating it as an utterance.

Therefore, while the meaning of a sentence is abstract, and decontextualized, that of an utterance is concrete, and context-dependent. The meaning of an utterance is based on sentence meaning; it is the realization of the abstract meaning of a sentence in a real situation of communication, or simply in a context. Now, take the sentence "My bag is heavy" as an example. Semantic analysis of the meaning of the sentence results in the one-place predication BAG (BEING HEAVY). Then a pragmatic analysis of the utterance will reveal what the speaker intends to do with it. The utterance meaning of the sentence varies with the context in which it is uttered. For example, it could be uttered by a speaker as a straightforward statement, telling the hearer that his bag is heavy. It could also be intended by the speaker as an indirect, polite request, asking the hearer to help him carry the bag. Another possibility is that the speaker is declining someone's request for help. All these are possible interpretations of the same utterance "My bag is heavy". How it is to be understood depends on the context in which it is uttered and the purpose for which the speaker utters it.

While most utterances take the form of grammatically complete sentences, some utterances do not, and some cannot even be restored to complete sentences. For example, "Good morning!" "Hi!" and "Ouch!" are all utterances, which have meaning in communication. If "Good morning!" can be restored to "I wish you a good morning", we do not know from which complete sentences "Hi!" and "Ouch!" have been derived.

6.2 Speech act theory

6.2.1 Austin's model of speech acts

Speech act theory is an important theory in the pragmatic study of language. It was originated with the British philosopher John Austin in the late 50's of the 20th century. It is a philosophical explanation of the nature of linguistic communication. It aims to an-

swer the question "What do we do when using language?"

Traditionally philosophers were interested in the truth-value of sentences, i.e., how to judge whether a sentence is true or false; they believed that a statement was used either to state a fact or to describe a state of affairs. Although a philosopher himself, Austin expressed doubt about this assumption because he found some statements were not used to state or to describe, they could not be judged as true or false; rather they were used by the speaker to do something. Thus he made a distinction between what he called "constatives" and "performatives". Constatives were statements that either state or describe, and were thus verifiable; performatives, on the other hand, were sentences that did not state a fact or describe a state, and were not verifiable. The four examples Austin used to illustrate the point have become classical and are frequently quoted in the literature:

(6-4) "I do."

(6-5) "I name this ship Elizabeth."

(6-6) "I give and bequeath my watch to my brother."

(6-7) "I bet you sixpence it will rain tomorrow."

"I do" is used in the course of a marriage ceremony for the speaker to get married. "I name this ship..." is used by an authorized person to perform the act of naming a ship. Similarly, the utterance "I give and bequeath my watch to my brother", occurring in a will, is used to perform the act of bequeathing. And when a speaker says "I bet you..." he is doing nothing else but betting.

So instead of stating something, the speaker, when uttering these sentences, is actually doing something, i.e. performing certain acts. The four examples Austin cited are all conventionalized cases. But the idea of doing something while speaking can certainly be broadened to include non-conventional acts such as stating, promising, requesting, and suggesting. Hence the theory came to be known as the speech act theory, according to which we are performing actions when we are speaking.

Later on, for a variety of reasons, Austin gave up his initial distinction between constatives and performatives. He set up another model to explain the way acts were performed by means of

language. According to his new model, a speaker might be performing three acts simultaneously when speaking: **locutionary act**, **illocutionary act**, and **perlocutionary act**.

A locutionary act is the act of uttering words, phrases, clauses. It is the act of conveying literal meaning by means of syntax, lexicon and phonology. An illocutionary act is the act of expressing the speaker's intention; it is the act performed in saying something. A perlocutionary act is the act performed by or resulting from saying something; it is the consequence of, or the change brought about by the utterance; it is the act performed by saying something. Let's look at an example:

(6-8) You have left the door wide open.

The locutionary act performed by the speaker is his utterance of all the words "you ", "have ", " door", "open", etc. thus expressing what the words literally mean.

The illocutionary act performed by the speaker is that by making such an utterance he has expressed his intention of speaking, i.e. asking someone to close the door, or making a complaint, depending on the context.

The perlocutionary act refers to the effect of the utterance. If the hearer gets the speaker's message and sees that the speaker means to tell him to close the door, the speaker has successfully brought about the change in the real world he has intended to; then the perlocutionary act is successfully performed.

Of the three speech acts, linguists are most interested in the illocutionary act because this kind of speech act is identical with the speaker's intention, and in their study of language communication, linguists are most interested in how a speaker expresses his intention and also how his intention is recognized by the hearer.

6.2.2 Searle's classification of speech acts

The speech act theory provided great philosophical insight into the nature of linguistic communication. In the light of this theory, when we are speaking a language, we are doing something, or in other words performing acts; and the process of linguistic commu-

nication consists of a sequence of acts. The theory aroused great interest among scholars in the 1960's and 1970's. One of those who made notable contributions to it is the American philosopher-linguist John Searle.

One of the contributions Searle has made is his classification of illocutionary acts. This is something Austin himself had tried to do but did not do very successfully. According to Searle, speech acts fall into five general categories, i. e., there are five general types of things we do with language. Specific acts that fall into each type share the same **illocutionary point**, but differ in their strength.

1. **representatives**: stating or describing, saying what the speaker believes to be true
2. **directives**: trying to get the hearer to do something
3. **commissives**: committing the speaker himself to some future course of action
4. **expressives**: expressing feelings or attitude towards an existing state
5. **declarations**: bringing about immediate changes by saying something

The illocutionary point of the representatives is to commit the speaker to something's being the case, to the truth of what has been said. In other words, when performing an illocutionary act of representative, the speaker is making a statement or giving a description which he himself believes to be true. Stating, believing, swearing, hypothesizing are among the most typical of the representatives, e. g.

(6-9) (I swear) I have never seen the man before.

(6-10) (I state) The earth is a globe.

Directives are attempts by the speaker to get the hearer to do something. Inviting, suggesting, requesting, advising, warning, threatening, ordering are all specific instances of this class, e. g.

(6-11) Open the window!

(6-12) You'd better go to the clinic.

(6-13) Your money or your life!

(6-14) Would you like to go to the picnic with us?

Commissives are those illocutionary acts whose point is to com-

mit the speaker to some future course of action, i. e. when speaking the speaker puts himself under a certain obligation. Promising, undertaking, vowing are the most typical cases, e. g.

(6-15) I promise to come.

(6-16) I will bring you the book tomorrow without fail.

The illocutionary point of expressives is to express the psychological state specified in the utterance. The speaker is expressing his feelings or attitude towards an existing state of affairs, e. g. apologizing, thanking, congratulating, e. g.

(6-17) I'm sorry for the mess I have made.

(6-18) It's really kind of you to have thought of me.

The last class "declarations" has the characteristic that the successful performance of an act of this type brings about the correspondence between what is said and reality. This reminds one of Austin's famous classical examples. Other examples are :

(6-19) I now declare the meeting open.

(6-20) I appoint you chairman of the committee.

(6-21) I fire you!

As has been said previously, all the acts that belong to the same category share the same purpose but differ in their strength or force. For instance, there are various ways to let others know what you believe in. You can say "I swear he is the killer", or "I guess he is the killer", or "I believe/think he is the killer". Then all the utterances that can be made to perform the same act may vary in their syntactic form. For example, in order to get someone to do something, we can use the imperative form "Close the door"; we can also choose one from a variety of other forms:

(6-22) Will you close the door !

(6-23) Can you close the door !

(6-24) Do you mind closing the door?

(6-25) I would be very grateful if you could close the door!

(6-26) The door is open!

(6-27) The door please!

...

6.3 Principle of conversation

As the objective of pragmatic study is to explain how language is used to effect successful communication, conversation, as the most common and natural form of communication, has drawn the attention of many scholars.

A philosopher and logician, Paul Grice made an attempt to explain the course of natural conversation, in which implied messages are frequently involved. His idea is that in making conversation, the participants must first of all be willing to cooperate; otherwise, it would not be possible for them to carry on the talk. This general principle is called the **Cooperative Principle**, abbreviated as **CP**. It goes as follows:

Make your conversational contribution such as required at the stage at which it occurs by the accepted purpose or direction of the talk exchange in which you are engaged.

To be more specific, there are four maxims under this general principle:

The maxim of quantity

1. Make your contribution as informative as required (for the current purpose of the exchange)
2. Do not make your contribution more informative than is required.

The maxim of quality

1. Do not say what you believe to be false.
2. Do not say that for which you lack adequate evidence.

The maxim of relation

Be relevant

The maxim of manner

1. Avoid obscurity of expression.
2. Avoid ambiguity.
3. Be brief (avoid unnecessary prolixity).
4. Be orderly.

It is interesting and important to note that while conversation participants nearly always observe the CP, they do not always observe these maxims strictly. These maxims can be violated for various reasons, but only when they are "flouted", to use Grice's term, does "**conversational implicature**" occur. Flouting a maxim means violating it blatantly, i.e. both the speaker and the hearer are aware of the violation. When we flout a maxim, our language becomes indirect. The following four conversation exchanges illustrate the violation of the four maxims and the resultant implicatures respectively:

(6-28) A: When is Susan's farewell party?

B: Sometime next month.

This is said when it is known to both A and B that B knows exactly when Susan is going to give her farewell party. Thus B is withholding some of the information required at this stage of conversation and is thus flouting the maxim of quantity. The implicature that results is "I do not wish to tell you when the party is going to be held."

(6-29) A: Would you like to join us for the picnic on Sunday?

B: I'm afraid I have got a class on Sunday.

This is said when it is known to both A and B that B is not having any class that will prevent him from going for the picnic. Thus B is saying something that he himself knows to be false and is flouting the maxim of quality. His implied message is "I do not want to join you for the picnic on Sunday."

(6-30) A: How did the math exam go today, Jonnie?

B: We had a basketball match with the other class and we beat them.

This is said when it is known to both A and B that it is entirely possible for B to tell A how well or how poorly he did in the math exam. B's response is thus totally irrelevant to A's question. Therefore he is flouting the maxim of relation. The implicature is "I don't wish to talk about the math exam."

(6-31) A: Shall we get something for the kids?

B: Yes. But I veto I-C-E-C-R-E-A-M.

This is said when it is known to both A and B that B has no difficulty in pronouncing the word “ice-cream”. Thus B has flouted the maxim of manner. B’s utterance has the implicature that “I don’t want the kids to know we are talking about getting them some ice-cream.”

The significance of Grice’s CP lies in that it explains how it is possible for the speaker to convey more than is literally said. As pragmatics focuses on the conveyance of meaning in the course of communication, CP is undoubtedly an important theory in the area.

Revision exercises:

1. What does pragmatics study? How does it differ from traditional semantics?
2. Why is the notion of context essential in the pragmatic study of linguistic communication?
3. How are sentence meaning and utterance meaning related, and how do they differ?
4. Try to think of contexts in which the following sentences can be used for other purposes than just stating facts:
 - a) The room is messy.
 - b) Oh, it is raining!
 - c) The music of the movie is good.
 - d) You have been keeping my notes for a whole week now.
5. According to Austin, what are the three acts a person is possibly performing while making an utterance. Give an example.
6. What are the five types of illocutionary speech acts Searle has specified? What is the illocutionary point of each type?
7. What are the four maxims of the CP? Try to give your own examples to show how flouting these maxims gives rise to conversational implicature?

7 LANGUAGE CHANGE

7.1 Introduction

It is a fact that all languages change through time, though they do so rather slowly. Where languages have written records, it is possible to see the actual changes that have taken place. A speaker of Modern English, for example, would find Old English unintelligible. College courses in Old English are offered in British and American universities in much the same way as any foreign language like Spanish or Swahili.

If we examine the changes that have occurred during the 1500 years since the “birth” of English, we can find changes in the phonology, morphology, syntax, lexicon and semantic components of the grammar. In other words, all parts of grammar may change. In the following sections we shall investigate the changes at different language levels.

7.2 Sound Change

Sound changes tend to be systematic; it is possible to see a regular pattern of pronunciation changes throughout the history of the English language.

The most dramatic change that English underwent included the vowels as illustrated in the examples below.

Old English	Modern English
[ɑ] (as in <i>arm</i>)	[əu]
stān	<i>stone</i>
hām	<i>home</i>
wrāt	<i>wrote</i>
rād	<i>rode</i>

Around the death of Chaucer in 1400 further vowel shift started. Vowels of **Middle English** underwent great changes, for example:

Middle English	Modern English	Middle English	Modern English
[i:] →	[aɪ]	[mɪs] →	[maɪs] mice
[u:] →	[aʊ]	[mu:s] →	[maʊs] mouse
[ɔ:] →	[əʊ]	[brɔ:k] →	[brəʊk] broke

7.3 Morphological and syntactic change

We have seen the sound changes in English. More recently, there has been an increasing interest in other aspects of grammar as well. Morphological and syntactic changes, for example, have also taken place. The examples below will enable us to witness such changes in progress.

7.3.1 Change in “agreement” rule

In the opening line of Chaucer’s “The Canterbury Tales” we found:

(7-1) Whan that Aprille with *his* shoures sooth ...

Literally:

(7-2) When that April with *his* showers sweet ...

In modern English, *April* is replaced by the pronoun *it*, and *his* only refers to an *animate masculine* noun, thus revealing the change in “agreement” rule.

7.3.2 Change in negation rule

As late as the fifteenth and sixteenth centuries, one could merely add *not* at the end of an affirmative sentence to negate it, as in:

(7-3) I love thee not.

(7-4) He saw you not.

In modern English, *not* must precede the main verb, and a *do*, marked for the proper tense, must be inserted:

(7-5) I love you. → I do not love you.

(7-6) He saw you → He did not see you.

7.3.3 Process of simplification

There may be a loss of grammatical distinctions, through a **process of simplification**. Old English, for example, had a number of **case** and **gender** distinctions which were lost during the Middle English period, e.g.

Old English
ure / urum

Middle English
→ *oure*

Modern English
→ *our*

Modern English has retained the *who/whom* distinction, but this too is slowly being lost.

7.3.4 Loss of inflections

Inflections often change by a process of rule-generalization, e.g.

Old English
stan / stanas
gear / gear

Modern English
stone / stones
year / years

As the examples reveal, *stone*, *year* and many other nouns have developed the regular +s plural form by analogy to *stone*.

7.4 Vocabulary change

When we say one knows a language, we mean he knows what

words and morphemes there are in that language. These basic units of meaning constitute the vocabulary, which is part of the grammar. Vocabulary change can include

- a) addition of new words
- b) loss of words
- c) changes in the meaning of words

There are a number of ways in which new words may be added to the language. In Chapter 3 we discussed compounding, the recombination of old words to form new ones with new meanings. Thousands of common English words have entered the language by this process as shown in the following examples:

<i>hard disk</i> ,	<i>mousemat</i> ,	<i>bar code</i> ,
<i>information highway</i> ,	<i>follow-up</i> ,	<i>fat-free</i> ,
<i>full-length</i> ,	<i>bitter-sweet and get-rich-quick</i> .	

We may also find new words formed by derivational processes, as in *glorification* and *insurmountable*. In the following section we shall deal with other methods for the addition of new words.

7.4.1 Addition of new words

a) Coinage

A new word can be coined outright to fit some purpose, e.g.

<i>walkman</i>	<i>Kodak</i>	<i>Xerox</i>	<i>Ford</i>
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b) Clipped words

Clipping refers to the abbreviation of longer words or phrases, e.g.

<i>gym</i>	—	<i>gymnasium</i>
<i>expo</i>	—	<i>exposition</i>
<i>memo</i>	—	<i>memorandum</i>
<i>disco</i>	—	<i>discotheque</i>
<i>burger</i>	—	<i>hamburger</i>
<i>dozer</i>	—	<i>bulldozer</i>
<i>quake</i>	—	<i>earthquake</i>
<i>fridge</i>	—	<i>refrigerator</i>
<i>script</i>	—	<i>prescription</i>

c) Blending

A blend is a word formed by combining parts of other words,
e.g.

smog — *smoke* + *fog*

motel — *motor* + *hotel*

brunch — *breakfast* + *lunch*

camcorder — *camera* + *recorder*

comsat — *communication* + *satellite*

videophone — *video* + *telephone*

d) Acronyms

Acronyms are words derived from the initials of several words,
e.g.

CBS — Columbia Broadcasting System

ISBN — International Standard Book Number

IT — information technology

CAD — computer assisted design

WTO — World Trade Organization

Such words are pronounced as the spelling indicates e.g.

APEC [ˈeɪpek] from Asian Pacific Economic Cooperation

AIDS [ˈeɪdz] from Acquired Immune Deficiency Syndrome

UNESCO [ju(:)ˈnesku] from United Nations Educational Scientific and Cultural Organization

Note, however, when the string of letters is not easily pronounced as a word, the acronym is produced by sounding out each letter, as in IDD for international direct dialing or UCLA (University of California, Los Angeles), which may also be pronounced as if it were spelled *youcla*.

e) Back-formation

New words may be coined from already existing words by “subtracting” an affix thought to be part of the old word. Such words are thus called back-formation, e.g.

to edit (derived from *editor* on the mistaken assumption that “or” was the agentive suffix)

to hawk (derived from *hawker*)

to beg (derived from *beggar*)

to baby-sit (derived from *baby-sitter*)

to butch (derived from butcher)

f) Functional shift

Words may shift from one part of speech to another without the addition of *affixes*, e.g.

Noun — verb	to knee
	to bug
	to tape
	to brake
verb — noun	a hold
	a flyby
	a reject
	a retreat
adjective — verb	to cool
	to narrow
	to dim
	to slow
adjective — noun	a daily
	a Christian
	the rich
	the impossible

g) Borrowing

When different cultures come into contact, words are often “borrowed” from one language to another. The **loan word** may label a new concept, or it may replace or become a synonym of a native word.

English has borrowed a very large number of words from many different languages throughout its history. The examples below are some of the loan words in English.

Latin	<i>bonus</i>	<i>education</i>	<i>exit</i>
Greek	<i>tragedy</i>	<i>cycle</i>	<i>physics</i>
Scandinavian	<i>skirt</i>	<i>scorch</i>	<i>scatter</i>
French	<i>prince</i>	<i>question</i>	<i>coup d'état</i>
Spanish	<i>ranch</i>	<i>guitar</i>	<i>barbecue</i>
Italian	<i>balcony</i>	<i>balloon</i>	<i>opera</i>
German	<i>beer</i>	<i>waltz</i>	<i>quartz</i>
Dutch	<i>freight</i>	<i>pump</i>	<i>buoy</i>

Chinese	tea	kowtow	sampan
Russian	sputnik	commissar	vodka
Arabic	zero	algebra	alcohol

In the realm of food and cooking, English has borrowed a large number of words from French. Words such as *salmon*, *ap-petite*, *dinner*, *supper*, *beef pork*, *sardine* and *mutton* entered the language during the Middle English period. In many cases the loan words do not reflect new products or ways of preparing them. However, later borrowings reflect techniques and food which were imported: *crème*, *sautee*, *bouillon* and *consommé*.

Many of these borrowed words have been so carefully assimilated into the English vocabulary that native speakers are unaware of their not being native. For example, few people are now aware of the following list of loan words:

Borrowed

<i>ceiling</i>	<i>judge</i>	<i>crime</i>	<i>court</i>
<i>face</i>	<i>jury</i>	<i>money</i>	<i>royal</i>
<i>stomach</i>	<i>piano</i>	<i>squash</i>	<i>glue</i>
<i>table</i>	<i>orthography</i>	<i>cockroach</i>	<i>solar</i>
<i>chair</i>	<i>yacht</i>	<i>awkward</i>	<i>esteem</i>

We should note that not all loan words become immediately assimilated into a language. This is especially true of some technical terms, as evidenced by the retention of original plurals of some Latin borrowings in English:

singular	plural
<i>fungus</i>	<i>fungi</i>
<i>memorandum</i>	<i>memoranda</i>
<i>nebula</i>	<i>nebulae</i>
<i>radius</i>	<i>radii</i>

Other words from various languages have taken on the regular English plural:

stadiums *campuses* *bandits* *operas* *gymnasiums*

7.4.2 Loss of words

In the last section we discussed how new words may come into a

language. It is equally true that words can be lost from a language. A reading of any Shakespeare's works will quickly reveal that English has lost many words. The following words, taken from *Romeo and Juliet*, have faded out of the English language.

<i>beseem</i>	→ <i>to be suitable</i>
<i>wot</i>	→ <i>to know</i>
<i>gyve</i>	→ <i>a fetter</i>
<i>wherefore</i>	→ <i>why</i>

The loss of words, as the examples show, takes place gradually over the course of several generations. On the other hand, the arrival of a new word is quite obvious and often draws attention.

We have already seen that new words are coming into the English vocabulary almost every day. However, many new coinages are very short-lived. One of the most common causes for the loss of lexical items is the discontinuation of the object they name. For instance, *soap flakes* is already obsolete, *wash board* and *rumble seat* are on the way out.

7.4.3 Changes in the meaning of words

As revealed in the last two sections, lexical items may be added to a language or be lost. It is also true that words may shift in meaning, i.e. semantic change. In this section we shall look at three processes for semantic change, namely, widening, narrowing, and shift in meaning.

a) Widening of meaning

When the meaning of a word becomes broader, that word means everything it used to mean, and then more. An interesting example is the word *holiday*, which originally meant *holy day*, i.e. a day of religious significance. Today this word signifies any day on which we don't have to work. Another example is *tail*, which once referred to "the tail of a horse". It is now used to mean "the tail of any animal".

The two examples can be illustrated as follows:

<i>holiday</i>	[+ specific]	[+ general]
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	<i>holy day</i>	<i>any rest day</i>
<i>tail</i>	[+ specific]	[+ general]
	<i>horse</i>	<i>any animal</i>

Similarly, a *companion* used to mean a person with whom you shared bread, but today it refers to a person who accompanies you. *Quarantine* once had the restricted meaning “forty days’ isolation”, and *bird* once meant “young bird”. Another interesting example is that the invention of steam-powered boats gave the verb “sail” an opportunity to extend its dominion to boats without sails.

b) Narrowing of meaning

In the course of several generations, semantic change has narrowed the meaning of a word to what it is in Modern English. “*Hound*”, for example, which used to be the general term for “dog”, has been narrowed to a special kind of dog. Interestingly, *girl* once meant “young person of either sex” and is now referred to “young people of female sex”.

A few more examples:

Word	Narrowing of Meaning
deer	any animal → a particular kind of animal
meat	food → edible part of an animal
corn	grain → a particular grain

c) Meaning shift

The fact that a lexical item may undergo a shift in meaning is the third kind of semantic change. The word *inn* refers to a small hotel or pub, usually an old one. But now a well-known nice hotel may use *inn* as its name, such as *Holiday Inn*. This is an example illustrating how the meaning of a word may be elevated. The over-worked Modern English word *nice* meant “ignorant” a thousand years ago, another example of elevation in meaning. The meaning of a word may be degraded in the course of time. For example, *lust* used to mean simply “pleasure” with no negative or sexual overtones and *immoral* meant “not customary”. *Silly* used to mean “happy” in Old English. By the Middle English period it had come to mean “naïve” and only in Modern English does it mean “fool-

ish”.

7.5 Some recent trends

The English language has not stood still during the last 50 years. In this section we shall attempt a general look at the main changes that have come about in normal English usage.

7.5.1 Moving towards greater informality

Since the Second World War there has been a trend towards much greater informality of expression.

Conversational forms like *ain't*, *don't* and *can't* are now commonly used in articles in the press, and often people prefer to use informal styles such as “*It's me*” and “*Who did you see?*” A London bus notice says, “*Please do not speak to the driver while he is driving.*” Years ago, this would have been: “*Passengers are required not to communicate with the driver while the vehicle is in motion.*”

Most people will agree that this trend towards greater informality in the use of the written word is to be welcome rather than deplored.

7.5.2 The influence of American English

For many years American English has been assaulting the British Isles with ever-increasing weight and persistence, through movies, newspapers, magazines, radio and television. Though *petrol*, *autumn*, *lift* and *pavement* have not surrendered to *gasoline*, *fall*, *elevator* and *sidewalk*, words which aptly fill a real need such as *teenager* and *commuter* have now become well established in British English, as in

(7-7) At the same time, a number of teenagers climbed on to the dish and held a little party of their own.

Similar examples of American English influence can be seen in the increasing use of the following words or expressions in British English:

to update — which does the work of 'to bring up to date'

to host — which means 'to be host at'

to check up — which slightly intensify the meaning of the simple verb 'to check'

7.5.3 The influence of science and technology

As science and technology develop, they use new words to express new concepts, new techniques as well as new inventions. As they have developed more rapidly during the last 50 years, consequently, new words and expressions have been coined one after another. Here are some examples in three different domains.

a) Space travel

Space travel, more novel still than nuclear reactors 50 years ago, has many linguistic discoveries to make. Interestingly, there has been a tendency to coin nice simple words and phrases like:

<i>space suit</i>	<i>heat-shield</i>	<i>splash-down</i>
<i>space station</i>	<i>linkup</i>	<i>moonscape</i>
<i>cosmonaut</i>	<i>readout</i>	<i>lunar module</i>
<i>rendzvous</i>	<i>lunar rover</i>	<i>mooncraft</i>

b) Computer and internet language

The development of computer and internet technology has produced a new vocabulary of their own. The computer and internet experts seem to take less trouble than most experts to express themselves grammatically, or to make themselves plain to ordinary readers. Below are a few examples of computer and internet language.

program — which has been adopted to denote a sequence of instructions fed into a computer and designed to solve a problem or attain a specific result

input — which means data introduced into a computer from external source

output — which means processed data or information transferred from the computer to an external device for storage or printing out or punching out

email — a system of sending written message electronically from one computer to another

hacker — an expert at programming and solving problems with a computer, also one who illegally gains access to and sometimes tampers with information in a computer system especially using a home computer.

information highway — system of communication linking computer by fibre-optic cable.

c) Ecology

Ecology refers to the study of the relationship between plants, animals, people, and their environment, and the balances between these relationships. As more and more people are concerned with the preservation of the environment and natural resources, quite a lot of words have appeared in this regard.

ecoactivist

ecocide

ecocatastrophe

visual pollution

noise pollution

graffiti pollution

eco-friendly

planet-friendly

environment-friendly

7.6 Causes of language change

The reader may be surprised to discover that linguists have little idea what causes a language to change. Certainly it is not the case that all speakers of the language awoke one morning and decided to use the word *mutton* for *sheep meat*. As we have observed, changes are more gradual, particularly those in the phonological and syntactic system.

The reasons for some changes are relatively obvious. For example, the rapid development of science and technology has led to the creation of many new words: *bullet train*, *fax*, *laser printer*, *eurostar*, *hovercraft*, *CD-ROM*, *laptop computer*, *telecom* and etc. In addition, social and political changes and political needs have supplied the English vocabulary with great quantity of new words and expressions: *shuttle diplomacy*, *mini-summit*, *jungle war*, *Euro*, *hot line*, to name just a few.

As more and more women have taken up activities formerly reserved for men, more neutral job titles have been created. The following are some examples that can be used for both genders, especially in the United States.

former job title	new job title
<i>chairman</i>	<i>chairperson</i>
<i>foreman</i>	<i>supervisor</i>
<i>policeman</i>	<i>police officer</i>
<i>fireman</i>	<i>fire fighter</i>
<i>jury foreman</i>	<i>jury foreperson</i>

Other changes are more difficult to explain, for example, no one knows exactly why vowel shift took place in English.

The way children acquire the language provides a basic cause of change. As will be discussed in Chapter 10, children develop a language without instruction and that the language used by children shows stages in the development of their grammar. The early simple grammars become more and more complex until they approximate the grammars used by the adults. The child's grammar is never exactly like that of the adult community. Children receive input from many dialects used around them and from many individual styles and so on. The features of these grammars may then merge. Certain rules may be simplified or over-generalized.

The older generation may be using "variable" rules. For example, at certain times they may say "*It's I*" and at other times "*It's me*". The less formal style is usually used with children. The next generation may use only the "*me*" form of the pronoun in this construction. In this case, the grammar will have changed.

Another source of change which can be regarded as "economy of memory" results in grammar simplification. Many exceptional morphemes, for example, lost their special status because of "linguistic laziness". This kind of change has been called internal borrowing — that is, we "borrow" from one part of the grammar and apply the rule generally. It is also called analogic change. By analogy to *foe/foes*, and *dog/dogs*, for example, speakers started saying *cows* as the plural of *cow* instead of the earlier plural *kine*.

Regularization of exceptional plural forms provides another example for analogical change. We borrow words like *agendum/agenda*, *curriculum/curricula*. Among many speakers the irregular plurals of these nouns have been replaced by regular plurals: *agendums*, *curriculumums*. In fact many speakers of English even use

plurals such as *dwarfs* instead of *dwarves*.

As a result of the “theory of least effort”, we often find the use of *cheap* in place of *cheaply*. In theory the distinction between these two forms is clear: *cheap* is an adjective and *cheaply* an adverb:

(7-8) *Pat wanted to buy a cheap car.*

(7-9) *Peggy sold it cheaply to get rid of it.*

Increasingly, however, *cheap* is used as an adverb, especially in colloquial English:

(7-10) *Cathy got it cheap.*

A number of young speakers even refuse to accept:

(7-11) *Cathy got it cheaply.*

It is possible that *cheaply* will gradually disappear from the English language and that the same form will function as both adjective and adverb just as forms like *better* do at present:

(7-12) *You couldn't find a better young man.*

(7-13) *He is getting better all the time.*

While the “theory of least effort” and “economy of memory” do seem to account for some linguistic changes, it cannot account for others. **Simplification** of grammar occurs, so does **elaboration** or **complication**. If a particular grammatical feature is lost, some feature may be added in another component of the grammar. English provides an example of just such a pair of related changes. When English lost most of its inflectional endings through the deletion of certain final syllables by phonological rules, it was no longer possible to identify the functional roles of nouns (subject or object) by their grammatical endings. To avoid confusions, strict word-order-constraints are thus placed on the grammar. While one sees a tendency toward greater simplification, one also finds a counter-tendency, the desire to be intelligible. Another change in English was the loss of the morphological rule creating causative verbs from adjectives (*blacken* from *black*). We did not thereby simultaneously lose the notion of causation, or even the possibility of expressing a causative form of adjectives, since we can still say things like *to cause to be red* or *to cause to be blue*, an example of how languages maintain a balance between expressibility and grammatical com-

plexity

There is undoubtedly no single cause of language change. Certainly it is difficult to see how one could exclude a variety of factors from any account. Many factors may contribute to the change — lexical addition, borrowing, simplification of grammars, elaboration (to maintain intelligibility), to name only a few. Perhaps we can say that like change in general, linguistic change is complex rather than simple to describe. The exact reasons for language change are still elusive and need to be further investigated.

Revision exercises:

1. The vocabulary of English consists of native and also thousands of borrowed words. Look up the following words in a dictionary which provides the etymologies (history) of words. In each case speculate as to how the particular word came to be borrowed from a particular language.

a. size	b. skill	c. royal
d. ranch	e. robot	f. potato
g. astronaut	h. emerald	i. pagoda
j. khaki	k. bulldoze	l. hoodlum
2. *The Encyclopedia Britannica Yearbook* has usually published a new word list, which is, in the Britannica's editor's view, a list of those words that had entered the language during the year. Would you expect a yearbook to publish a "lost-word list" recording the words dropped from the language during the year? Defend your answer.
3. Below is a passage from Shakespeare's *Hamlet*,

King: Where is Polonius?

Hamlet: In heaven, send thither to see.

If your messenger find him not there, seek him i' the other place yourself. But indeed, if you find him not within this month, you shall nose him as you go up the stairs into the lobby.

Act IV, scene iii

Study these lines and identify every difference in expression between Elizabethan and Modern English that is evident.

4. Comment with examples on the following statement "Words and expressions will be forced into use in spite of all the exertions of all the writers in the world."
5. Suppose you are outside a government office where doors still bear the notice, "This door must not be left in an open position." Now try to explain the notice in simple and plain English.
6. Give at least two examples showing the influence of American English on British English.
7. Find in any books, newspapers, or journals newly coined words in association with social and political needs, internet or computer language.
8. With examples, give some plausible explanations for linguistic change.

8 LANGUAGE AND SOCIETY

8.1 The scope of sociolinguistics

8.1.1 The relatedness between language and society

Sociolinguistics is the sub-field of linguistics that studies the relation between language and society, between the uses of language and the social structures in which the users of language live.

One does not need to be very observant to find that certain linguistic phenomena cannot be accounted for unless they are placed in the general context of society. In other words, social factors cannot be excluded from our description of language and language use.

There are many indications of the inter-relationship between language and society. One of them is that while language is principally used to communicate meaning, it is also used to establish and maintain social relationships. This social function of language is embodied in the use of such utterances as "Good morning!", "Hi!", "How's your family?", "Nice day today, isn't it?".

Another indication is that users of the same language in a sense all speak differently. The kind of language each of them chooses to use is in part determined by his social background. And language, in its turn, reveals information about its speaker. When we speak, we cannot avoid giving clues to our listeners about ourselves.

Then to some extent, language, especially the structure of its lexicon, reflects both the physical and the social environments of a society. For example while there is only one word in English for “snow”, there are several in Eskimo. This is a reflection of the need for the Eskimos to make distinctions between various kinds of snow in their snowy living environment.

As a social phenomenon language is closely related to the structure of the society in which it is used, and the evaluation of a linguistic form is entirely social. To a linguist, all language forms and accents are equally good as far as they can fulfill the communicative functions they are expected to fulfill. Therefore, judgments concerning the correctness and purity of linguistic varieties are social rather than linguistic. A case in point is the use of the postvocalic [r]. While in England accents without postvocalic [r] are considered to be more correct than accents with it, in New York city, accents with postvocalic [r] enjoys more prestige and are considered more correct than without it.

8.1.2 Speech community and speech variety

In sociolinguistic studies, speakers are regarded as members of social groups. The social group that is singled out for any special study is called the **speech community**. For general linguistics, a speech community is defined as a group of people who form a community and share the same language or a particular variety of a language. However, sociolinguists would define speech community as a group of people who do in fact have the opportunity to interact with each other and who share not just a single language with its related varieties but also attitudes toward linguistic norms.

Within a speech community there exist various social groups. Social groups are defined in a number of ways besides the geographical background of the speakers. A social group may distinguish itself from the rest of the community by the educational background, the occupation, the gender, the age, or the ethnic affiliation of its members.

Speech variety, or language variety, refers to any distinguish-

able form of speech used by a speaker or a group of speakers. Linguistic features of a speech variety can be found at the lexical, the phonological, the morphological, or the syntactical level of the language. Variety is considered a more neutral term than terms such as standard or non-standard language and dialects. In sociolinguistic studies three types of speech variety are of special interest, i.e. **regional dialects**, **sociolects**, and **registers**, which will be dealt with in greater detail in the sections to follow.

8.1.3 Two approaches to sociolinguistic studies

The study of the relationships between language and society can be approached in two ways.

We can look at society as a whole and consider how language functions in it and how it reflects the social differentiations, i.e. a bird's-eye view of the languages used in society.

The other approach is to look at society from the point of view of an individual member within it, or a worm's-eye view of language in use.

The former is sometimes referred to as macro-sociolinguistics or the sociology of language, and the latter as micro-sociolinguistics or sociolinguistics proper.

Here we are more interested in how language functions in the communication between members of the society.

8.2 Varieties of language

It is an obvious fact that people who claim to be speakers of the same language do not speak the language in the same manner. For example, all native-speakers of English do not speak the language in the same way. On the other hand, the language used by the same individual varies as the circumstances of communication varies. Thus the notion of a language is not monolithic and there exist types or varieties of the same language. The varieties of a language are the actual manifestations of the general notion of the language

and they are assumed to be related both to the language user and to the use to which the language is put. Varieties related to the user are normally known as dialects and varieties related to use as registers.

8.2.1 Dialectal varieties

8.2.1.1 Regional dialect

A regional dialect is a linguistic variety used by people living in the same geographical region. It has been found that regional dialect boundaries often coincide with geographical barriers such as mountains, rivers, or swamps. This differentiation is accounted for by the lack of communication in the old days when travel was difficult and there was little communication between rural communities separated by some kind of geographical barrier. In most cases, however, the regional dialects spoken in two neighbouring areas are mutually intelligible to a great extent, and the change from one dialect to another is very often a gradual, rather than an abrupt process. Although geographical barriers are the major sources of regional variation of language, loyalty to one's native speech and physical and psychological resistance to change are among other reasons of such variations.

In the present day, as there is a marked increase in communication brought about by mass media and by the development of modern transport, the stability of local dialects seems to be decreasing. Young people are less likely to speak their local dialect all the time and are more likely to be influenced by the language spoken in town and on radio and TV. This results in the decreasing of geographical variation in language.

8.2.1.2 Sociolect

Just as regional dialect is associated with separation caused by physical conditions, social dialect has to do with separation brought about by different social conditions. Social-class dialect, or sociolect, refers to the linguistic variety characteristic of a particular social class. Two people who were born and brought up in the same

geographical region and speak the same regional dialect may speak differently because of a number of social factors. Consciously or unconsciously, their social backgrounds influence their choice of linguistic forms, and the linguistic features of the language they use reveal their identities. When we look at the language used by two speakers A and B, we can estimate roughly their relative social status:

(8-1) Speaker A	Speaker B
I did it yesterday.	I done it yesterday.
He hasn't got it.	He ain't got it.
It was she that said it.	It was her what said it.

Many sociolinguists have made investigations to obtain evidence for the correlation between certain phonetic features and social variables. For example a study of the percentage of -n' as opposed to -ng in "walking", "running", etc. was made among speakers of different social classes in Norwich in England. The result of the investigation is summarized as follows:

	Percentage of speakers using [n] for [ŋ]
Middle middle class	31%
Lower middle class	42%
Upper working class	87%
Middle working class	95%
Lower working class	100%

Similar investigations have also been carried out at the grammatical level. It has also been found that the absence of the suffix of the third-person present-tense singular form of verbs and the non-standard use of double negation like *I can't eat nothing* are both correlated with the social status of the speaker.

Accent is an important marker of sociolect. A case in point is the so-called "Received Pronunciation" (RP) in British English, which had become characteristic of upper class speech throughout the country by the 19th century. Subsequently this non-localized, particular way of pronouncing standard English was an indicator of

a public school education and thus a high social status on the part of the speaker. And the possession of an RP accent was extremely important because it served as a high-status marker, and also as a qualification for high-prestige employment no matter what other abilities the work might require. On the other hand, the prestige of local accents of English has been low and it is not acceptable for such positions as those in the Civil Service or in the Foreign Office. Therefore, regional accents and RP have taken on social implications, becoming in effect social accents. However, this is a very exceptional case; in most other countries, regional accents or standard accents do not play such an important part in the status hierarchy.

8.2.1.3 Language and gender

It is interesting to know that the language used by men and women have some special features of their own. It has been observed by linguists that women are usually more status-conscious than men in the English-speaking world; therefore, their speech closely approaches the standard variety than the speech of men. For instance, an investigation in Norwich, England shows that women have a lower frequency of *-n* for *-ng* than men do. This means that women are on the whole more "correct" in their pronunciation than men are. In a survey of speech of Australian adolescents, most of the boys have been found to be in the Broad or General categories (i.e. the less cultivated and less educated categories). The proportion of girls classed under Cultivated Australians was about 8 times that of boys.

Male and female speeches are also found to be different in the use of intonations. The female speakers tend to have a wider range in their intonation; this makes their speech sound somewhat affected. And female speakers are heard to use the low-rise intonation with statements much more frequently than male speakers.

Gender differentiation is also reflected in the use of certain lexical items. While the word *girls* is commonly used by females to females as an address form regardless of the age of the addressee, men would mainly use *ladies*. Some adjectives of evaluation are

used more frequently by females than by males, such as *nice*, *lovely*, *cute*, *fantastic* and also some intensifiers, such as *awfully*, *terribly*.

Female speech is, on the whole, less assertive and thus sounds to be more polite than male speech. Female speakers tend to use more often the question tag, and such syntactic forms as *I'm afraid ...* and *I'm not sure but ...*

8.2.1.4 Language and age

It has been noticed that in many communities the language used by the old generation differs from that used by the younger generation in certain ways. Certain linguistic features occur more frequently in the speech of one generation than that of the other. The most striking difference is found at the lexical level. Lexical variation is more noticeable across three-generation time span than two-generation time span. For example, an elderly man who still talks about the "icebox" or the "wireless" may be confused by the speech of his teenage granddaughter who like to "pig out" whatever she sees in the "fridge" while listening to her "boombox".

The causes of such differentiation are complex. The root cause is that society is changing, and this causes difference in social attitudes, value judgments, etc. between the two generations. In general, old people tend to be more conservative than the younger generation in their speech habits, and feel more at home using old words, and less ready to incorporate new terms into their vocabulary.

8.2.1.5 Idiolect

Idiolect is a personal dialect of an individual speaker that combines elements regarding regional, social, gender, and age variations. In other words, an individual speaker's regional and social background, his/her gender and age jointly determine the way he/she talks. And the language he/she uses, which bears distinctive features of his/her own, is his/her idiolect. In a narrower sense, what makes up a person's idiolect also includes such factors as voice quality, pitch and speech tempo and rhythm. While the language sys-

tem provides all its users with the same set of potentials, the realization of these potentials is individualized by a number of social factors, resulting in idiolects. This makes it possible for us to recognize a speaker by the way he/she speaks.

8.2.1.6 Ethnic dialect

An ethnic dialect is a social dialect of a language that cuts across regional differences; it is mainly spoken by a less privileged population that has experienced some form of social isolation such as racial discrimination or segregation. An ethnic dialect of English that has received a lot of attention in recent studies of sociolinguistics is Black English, the kind of English spoken mostly by a large section of non-middle-class American Blacks. Black English often impresses people as “bad” or “poor” or “uneducated” speech. Such an evaluation is to a large extent socially prejudiced. As far as we understand, Black English is just another non-standard variety of English, which differs from standard English in ways similar to those in which other non-standard varieties of English differ from the standard variety. Like other varieties of English, Black English has its own features at the phonological, morphological, syntactic, and lexical level.

A prominent phonological feature of Black English is the simplification of consonant clusters at the end of a word. According to this consonant deletion rule, the final-position consonants are often deleted; thus “passed” is pronounced [pɑ:s], mend [men], desk [des], and told [təʊl].

A syntactic feature of Black English that has often been cited to show its illogicality is the deletion of the link verb “be”. In Black English we frequently come across sentences without the copula verb: “They mine”, “You crazy”, “Her hands cold”, and “That house big”. In fact, copula verb deletion is not a unique feature of Black English; it is also found in some other dialects of English and in languages like Russian and Chinese. Another syntactic feature of Black English that has been the target of attack is the use of double negation constructions, e.g.

(8-2) He don't know nothing. (He doesn't know anything.)

(8-3) I ain't afraid of no ghosts. (I'm not afraid of ghosts.)
Some people consider these sentences illogical because they claim that two negatives make a positive. But in fact such double negative constructions were found in all dialects of English of the earlier periods.

8.2.2 Register

In the previous section we have looked at the varieties of language related to the user. But language also varies with the use it is made of. In a monolingual situation where one language is supposed to be used by all members of the community, it can be easily observed that language varies with the user and it also varies with the circumstances under which it is used, i.e. according to the social context in which the language user finds himself. In any speech community there is hardly any speaker who sticks to one style of speaking all the time. A competent native speaker of a language is in possession of a variety of ways in using the language. The totality of linguistic varieties possessed by an individual constitutes his **linguistic repertoire**.

There are many social constraints that come into play in controlling which variety from the linguistic repertoire of a speaker is to be used on a particular occasion. One could probably mention the subject matter, the physical setting of the interaction, the participants involved, and the medium of communication. Many sociolinguists have tried to work out models to describe the relationship between social variables and linguistic features. A well-known one of these models is the British linguist Halliday's register theory.

While some linguists use the term "register" in a restricted sense, referring to the variety of language related to one's occupation, Halliday uses the word in a much broader sense. According to Halliday, "Language varies as its function varies; it differs in different situations." The type of language which is selected as appropriate to the type of situation is a **register**.

Halliday further distinguishes three social variables that determine the register: field of discourse, tenor of discourse, and mode

of discourse.

Field of discourse refers to what is going on : to the area of operation of the language activity. It is concerned with the purpose and subject-matter of communication. It answers the questions of 'why' and 'about what' communication takes place. Field of discourse may be non-technical or technical: shopping, game-playing, and a personal letter are instances of non-technical fields. Technical fields refer to the specialized fields such as a linguist giving a lecture in class and meteorologists talking about the weather. The field of a register determines to a great extent the vocabulary to be used in communication and it also determines the phonological and grammatical features of the language.

Tenor of discourse refers to the role of relationship in the situation in question: who the participants in the communication groups are and in what relationship they stand to each other. It answers the question of 'to whom' the speaker is communicating. This dimension to a great extent determines the level of formality and the level of technicality of the language we use.

Mode of discourse mainly refers to the means of communication. It is concerned with "how" communication is carried out. Fundamental to the mode of discourse is the distinction between speaking and writing. But there are finer distinctions, e.g. spoken language may be spontaneous or prepared beforehand and written language may be intended to be read with the eye or to be spoken.

Any instance of communication can be analyzed in terms of these three dimensions. For example, a lecture on biology in a technical college could be identified as

Field: scientific (biological)

Tenor: teacher - students (formal, polite)

Mode: oral (academic lecturing)

The three variables are the features of the context of situation which determine the features of language appropriate to the situation, i. e. register. And they determine the register collectively, not piecemeal.

8.2.3 Degree of formality

Language used on different occasions differs in the degree of formality, which is determined by the social variables, e.g. who we are talking with and what we are talking about.

An American linguist Martin Joos, distinguishes five stages of formality, namely, 1. intimate, 2. casual, 3. consultative, 4. formal, and 5. frozen. According to Joos, it is routine to alternate, within a single discourse, between two styles which neighbour on this scale; for example, a discourse which alternates between casual style and consultative style is quite an ordinary colloquial discourse, and a familiar discourse alternates between casual and intimate styles. An amusing illustration of these five styles was given by Stevens and reprinted in Corder:

(8-4) *Frozen*: Visitors would make their way at once to the upper floor by way of the staircase.

(8-5) *Formal*: Visitors should go up the stairs at once.

(8-6) *Consultative*: Would you mind going upstairs right away, please?

(8-7) *Casual*: Time you all went upstairs now.

(8-8) *Intimate*: Up you go, chaps!

Different styles of the same language can be characterized through differences at three levels, namely, syntactic, lexical and phonological.

A look at the following two passages will reveal how language can vary at the syntactic level:

(8-9) **Passage A**

It has been noted with concern that the stock of books in the library has been declining alarmingly. Students are asked to remind themselves of the rules for the borrowing and return of books, and to bear in mind the needs of other students. Penalties for overdue books will in the future be strictly enforced.

(8-10) **Passage B**

The number of books in the library has been going

down. Please make sure you know the rules for borrowing, and don't forget that the library is for everyone's convenience. So from now on, we're going to enforce the rules strictly. You have been warned!

The reader will immediately sense that Passage A is more formal than Passage B. The use of passive and impersonal constructions accounts in part for its higher degree of formality.

Variation at the lexical level is quite obvious. Some words in English, mostly the loan-words, are more formal. It is easy to make a contrastive list:

More formal

offspring

decease

peruse

reply

participate in

encounter

tolerate

Less formal

children

die

read

answer

take part in

come across

put up with

Another example is the study made by sociolinguists of the use of address forms in English. It shows the correlation between the choice of a certain lexical item and the social constraints. Like other languages, English provides a number of ways to address the same person, e.g. Sir, Mr. Smith, Professor Smith, Smith, Fredrick, Fred, Mate, Uncle Fred, Dad, each of which has a different social implication.

8.3 Standard dialect

The standard variety is a superimposed, socially prestigious dialect of a language. It is the language employed by the government and the judiciary system, used by the mass media, and taught in educational institutions, including school settings where the language is taught as a foreign or second language. The standard dialect is a particular variety of a language in that it is not related to any par-

ticular group of language users, but it is the variety which any member of a speech community can possibly use regardless of his social and geographical backgrounds, his gender and age.

The standard variety has a number of features. First of all, the standard dialect is based on a selected variety of the language, usually it is the local speech of an area which is considered the nation's political and commercial center. For example, standard English developed out of the English dialects used in and around London as they were modified over the centuries by speakers in the court, by scholars from universities and writers. Gradually the English used by the upper classes in the capital city diverged markedly from the English used by other social groups and came to be regarded as the model for all those who wished to speak and write well.

Second, the standard dialect is not a dialect a child acquires naturally like his regional dialect. It is a superimposed variety; it is a variety imposed from above over the range of regional dialects. Some government agency writes grammar books and dictionaries to 'fix' this variety and everyone agrees on what is correct usage of the language. So it has a widely accepted codified grammar and vocabulary. Once codification takes place, it is necessary for an ambitious citizen to learn to use the correct language and to avoid 'incorrect' language. Therefore, the standard dialect is the variety which is taught and learnt in schools.

Then the standard dialect has some special functions. Also designated as the official or national language of a country, the standard dialect is used for such official purposes as government documents, education, news reporting; it is the language used on any formal occasions.

8.4 Pidgin and Creole

A **pidgin** is a special language variety that mixes or blends languages and it is used by people who speak different languages for restricted purposes such as trading. The term is believed to have originated from the pronunciation of the English word "business" in Chinese

Pidgin English.

Pidgins arose from a blending of several languages such as Chinese dialects and English, African dialects and French, African dialects and Portuguese. Usually a European language serves as the basis of the pidgin in the sense that some of its grammar and vocabulary is derived from the European language used by traders and missionaries in order to communicate with peoples whose languages they did not know.

Pidgins typically have a limited vocabulary and a very reduced grammatical structure characterized by the loss of inflections, gender and case. The “simplified” variety performs its functions as trading and employment.

When a pidgin has become the primary language of a speech community, and is acquired by the children of that speech community as their native language, it is said to have become a **Creole**. The structure of the original pidgin is expanded to enable it to fulfill its new functions. The vocabulary is vastly enriched, and new syntactic-semantic concepts developed. Notable examples of Creole are the English-based Creole of Jamaica, and the French-based Creole of Haiti.

8.5 Bilingualism and diglossia

It has been observed that in some speech communities, two languages are used side by side with each having a different role to play; and language switching occurs when the situation changes. This constitutes the situation of **bilingualism**.

Paraguay is one of the places where research on bilingualism has been carried out. The two languages used there are Spanish and Guarani, an American Indian language. A high percentage of the population know and use both. After an analysis of questionnaire results, Rubin (1968) defines five major variables to be considered in predicting language usage in Paraguay:

- (1) location of the interaction
- (2) formality-informality of the interaction

- (3) degree of intimacy of the speakers
- (4) degree of seriousness of the discourse
- (5) sex of the participants

A typical example of a bilingual community is an ethnic ghetto where most of the inhabitants are either immigrants or children of immigrants. Bilingualism also occurs in countries and regions with substantial populations speaking different languages and with the need for more than one standard language. A typical example is Canada, where both French and English are recognized as official languages. So is Belgium, where French and Flemish Dutch are both recognized as official languages. Other countries and regions in the world which are bilingual include Australia, Singapore, Switzerland, Pakistan, Uganda, and part of U.S.A. As a result of increasing immigration in the world, bilingualism is spreading.

The term **diglossia**, first used by Ferguson in 1959, refers to a sociolinguistic situation similar to bilingualism. But instead of two different languages, in a diglossic situation two varieties of a language exist side by side throughout the community, with each having a definite role to play. The language which Ferguson used as examples are Arabic, Modern Greek, Swiss German and Haitian Creole. Each of these languages has two varieties: the high variety (H) and the low variety (L). The two varieties have overt recognition in the community and have commonly known and used labels:

	High	Low
Swiss German	Hochdeutsch	Schweizerdeutsch
Arabic	classical	colloquial
Greek	Katharevousa	Dhimotiki
Haitian	French	Creole

One of the most important features of diglossia is the specialization of function of the two varieties. Each variety is the appropriate language for certain situations with very slight overlapping.

Ferguson gives a sample listing of possible situations and the variety normally used:

	High	Low
Sermon in church or mosque	+	
Instructions to servants, waiters, workmen, clerk		+
Personal letter	+	
Speech in parliament, political speech	+	
University lectures	+	
Conversation with family, friends		+
News broadcast	+	
Newspaper editorial, news story, caption on picture	+	
Caption on political cartoon		+
Poetry		+
Folk literature		+

Revision exercises:

1. How is language related to society?
2. Explain with an example that the evaluation of language is social rather than linguistic.
3. What are the main social dialects discussed in this chapter? How do they jointly determine idiolect?
4. In what sense is the standard dialect a special variety of language?
5. What is register as used by Halliday? Illustrate it with an example of your own.
6. What linguistic features of Black English do you know? Do you think Black English is an illogical and inferior variety of English? Why (not)?
7. What peculiar features does pidgin have?
8. How do bilingualism and diglossia differ, and what do they have in common?

9 LANGUAGE AND CULTURE

9.1 Introduction

Language and culture, intrinsically dependent on each other, have evolved together through the history. Their mutual interdependence can find proof in the rise of civilization, the development of writing and human communication.

Much of the recent work has revealed that language is related to cognition, and cognition in turn is related to the cultural setting.

9.2 What is culture?

Culture, in a broad sense, means the total way of life of a people, including the patterns of belief, customs, objects, institutions, techniques, and language that characterizes the life of the human community. As culture is so inclusive, it permeates virtually every aspect of human life and influences predominantly people's behavior, including linguistic behavior. In a narrow sense, culture may refer to local or specific practice, beliefs or customs, which can be mostly found in folk culture, enterprise culture or food culture etc.

Generally speaking, there are two types of culture: material and spiritual. While material culture, as the term itself suggests, is

concrete, substantial and observable, most of spiritual culture, the products of mind (ideologies, beliefs, values and concepts of time and space, for example), is abstract, ambiguous, and hidden. In contrast with nature in the sense of what is born and grows, culture refers to what has been grown and brought up with, in other words, what can be nurtured. Culture, especially material culture, is reproduced and preserved through the maintaining of beliefs, traditions, education and other institutional mechanisms, meanwhile, it changes slowly with the development of the society.

9.3 The relationship between language and culture

When we learn a new word we tend to look for its meaning in the word itself. Yet in addition to its dictionary meanings, the same word may stir up different associations in people. Take the word *dog* for example. In the United States, the word *dog* in most instances conjures up an image of a furry, domesticated family pet. In some areas of the world, such as Hong Kong, however, *dogs* are considered to be a culinary amenity and often are eaten. Therefore, the word *dog* elicits a quite different meaning because of different cultural experiences. This example indicates that language use is heavily tinted with its culture.

From the above, we can infer that a language not only expresses facts, ideas, or events which represent similar world knowledge by its people, but also reflects the people's attitudes, beliefs, world outlooks etc. In a word, language expresses cultural reality. When a child acquires his mother tongue, he also acquires a language-specific culture and becomes socialized in certain ways. If he moves to another community or country, he may be recognized easily not as a member of the local community group but as a newcomer from the ways he uses his language. This implies that language embodies cultural identity. To dig it further, a language, as a system of signs with their own cultural substances and values, may be viewed as a

symbol of social identity. People are identified via their use of language. In this sense, language symbolizes cultural reality.

On the other hand, as people's language uses express the culture, to be more specific, their community culture represented by its social conventions, norms and social appropriateness, the culture both emancipates and constrains people socially, historically and metaphorically. Sharing a same community culture, people have acquired common ways of viewing the world through their speech interactions with other members of some same group. While the commonness is constantly reinforced, the **discourse community** converges. (Here the discourse community refers to the common ways in which members of some social group use language to meet their needs.) The uniqueness of each group's language uses in grammatical, lexical, and phonological aspects etc, the ways they talk and the style with which they talk etc. constitute different **discourse accents**. Different discourse accents suggest different social status. For example, people in the West End in London speak differently from the East Enders.

Historically, each culture has its past and tradition, to put it simply, the culture of everyday practices has been evolved and become consolidated over time. A culture consists both of its ways how a social group represents itself, its technological achievements, monuments and works of art and of its historical identity recorded and passed down by the pop culture. These altogether constitute its social identity. For example, on the mentioning of the United States, people may often think of its advanced computing technology represented by the Microsoft, its pop songs and the Hollywood movies. However, its culture would be incomplete without the Declaration of Independence and other historic events. It is language that has played a major role in socializing the people and in perpetuating culture, especially in print form.

In addition, culture also affects its people's imagination or common dreams which are mediated through the language and reflected in their life. They serve a metaphor for its cultural reality. The well-known *American Dream* personified by Abraham Lincoln and Benjamin Franklin and others is just an illustration. There-

fore, language is not only intrinsically related to what the culture is and what it was, but also related to the culture of imagination governing people's decisions as well as actions. The interplay between language and culture may result in various forms of **socialization** and people with different cultures may be socialized in different ways with different **acculturation**, which we will talk about later.

Although language and culture are inextricably intertwined, this relationship is not analogous to that of structures and processes. Rather, culture is a wider system that completely includes language as a subsystem. Linguistic competence is one variety of cultural competence and speech behavior is one variety of social behavior. The relation of language to culture is that of part to whole.

To sum up, since the knowledge and beliefs that constitute a people's culture are habitually encoded and transmitted in the language of the people, it is extremely difficult to separate the two. On the one hand, language as an integral part of human being, permeates his thinking and way of viewing the world, language both expresses and embodies cultural reality. On the other, language, as a product of culture, helps perpetuate the culture, and the changes in language uses reflect the cultural changes in return.

9.4 Sapir-Whorf Hypothesis

In the discussion about the relationship between language and culture, one of the essential issues is that between language and thought. Edward Sapir and Benjamin Whorf, through their studies of American Indian languages, proclaimed that the structure of the language people habitually use influences the ways they think and behave. That is to say, different languages offer people different ways of expressing the world around, they think and speak differently, this is also known as **linguistic relativity**. Sapir and Whorf believe that language filters people's perception and the way they categorize experiences. This interdependence of language and thought is now known as **Sapir-Whorf hypothesis (SWH)**. Since its formulation, the hypothesis was subject to fierce controversy and scorn.

Until recently with the revival interest in this issue, it regains people's attention.

The hypothesis is now interpreted mainly in two different ways: a strong version and a weak one. While the strong version believes that the language patterns determine people's thinking and behavior, the weak one holds that the former influence the later. So far, many researches and experiments conducted in various disciplines provide support to the weak version. The studies have shed new light on our understanding of the hypothesis: people tend to sort out and distinguish experiences differently according to the semantic categories provided by their different codes.

Here is an example. English-speaking culture teaches its people to name what is practical, useful and important. In a general sense, the important things take on specific names while the less important things have general names that must be modified through additional words to become specific. A good illustration of this point is the word *snow* in Eskimo and English.

The Eskimos have countless words for snow. For them snow is extremely important and so crucial to life that each of its various forms and conditions is named. In English-speaking cultures, snow is far less important and the simple word *snow* usually suffices the needs. When some needs become more specific, however, longer phrases can be made up to meet these needs: "*corn snow*", "*fine powder snow*", and "*drifting snow*". Once again this proves that there is a connection between the words a culture selects and the ideas and things of that culture. In short, each culture presents to its members, either consciously or subconsciously through words, the ideas and concepts that culture transmits from generation to generation.

To conclude this section, the study of the linguistic relativity or SWH has shed two important insights:

- (1) There is nowadays a recognition that language, as code, reflects cultural preoccupations and constrains the way people think.
- (2) More than in Whorf's days, however, we recognize how important context is in complementing the meanings en-

coded in the language.

9.5 Linguistic evidence of cultural differences

Any linguistic sign may be simultaneously of a **denotative**, **connotative**, or **iconic** kind of meanings. To begin with, any sign has a meaning that can be found in a dictionary, this is the denotative meaning. For example, “*rose*” is a flower that has a pleasant smell and is usually red, pink, white, or yellow etc. On most occasions “*rose*” means more than a flower, it also triggers many associations mostly good ones such as love, fragrance, passion and beauty etc. These are its connotations or connotative meanings. Moreover, the word “*rose*” also invokes image (or icons) to people. The famous line “*My love is a red , red rose*” stirs up vividly the imagination of a beautiful young lady. This is the iconic meaning. Many poetic or literary works use heavily the words filled with iconic meanings.

All these types of meanings are bound with cultural encodings or associations, for the meanings of words cannot be separated from their associations. Each language has its own metaphors that provide semantic cohesion within its boundaries. Motivated by the need and desire to influence others, people choose to use words which emphasize denotative meaning, connotative meaning or iconic meanings or all of them, during the same process its cultural meanings are created.

The following are some illustrations of the cultural differences in language use which we may often come across in our daily life. We shall examine them one by one.

9.5.1 Greetings and terms of address

It is estimated that in English there are at least a dozen different greetings, from “*Hi*” and “*Hello*” to more specific and longer ones like “*How are you getting on?*” or “*How is everything with you?*”. People choose the proper one to greet different people they meet on different occasions. For example, people greet a new acquaint-

tance with “*How do you do?*” and expect the same in answer, but they greet an old friend differently. When friends meet, you may find more than once they are uttering “*How are you?*” at the same time to each other, and they both answer “*Fine, thank you.*” Differently, a Chinese speaker may greet his friends or new acquaintance with “*Ninhao*” or “*Nihao*”, whether they meet for the first time or anytime in the day.

Another noticeable difference between the two greeting systems is that most Chinese people tend to greet acquaintances with “*Have you eaten?*” or “*Where are you heading for?*” Obviously, if we greet the native speakers of English in this way, it will certainly cause misunderstanding.

Sometimes different terms of address can be equally misleading for Chinese learners of English or English learners of Chinese. While in China “*Tongzhi*” was once used for all people irrespective of sex, position or marital status, in English-speaking communities “*Mr.*” “*Mrs.*” “*Miss.*” “*Ms.*” would be appropriate in similar situations. It is also interesting to note that in recent years “*Mr.*” and “*Miss.*” are picked up again to replace “*Tongzhi*” with the changes in society. Meanwhile “*shifu*” (literally means “master worker”) is frequently used to show respect for strangers. English speakers, on similar occasions, would use “*Sir*” or “*Madam*”.

The extension of **kinship terms** is another feature of Chinese culture. Terms such as “*uncle, aunt, grandpa, and granny*” are used as honorific titles for senior people or strangers, as in “*Granny Li*” and “*Uncle Zhang*”. Native speakers of English would be puzzled if they are addressed in this way by people outside the immediate family. Similarly, the use of respectful titles — *Chairman Jiang, Premier Zhou, Director Ma* — to indicate people’s influential status is typical of Chinese culture. Such practice, however, is less common in English-speaking cultures.

9.5.2 Thanks and compliments

Cultural differences are also evident in the ways gratitude and compliments are expressed. It is noted that people in the West tend to

verbalize their gratitude and compliments more than Chinese speakers and that the westerners tend to accept thanks and compliments more directly and frankly than we Chinese do.

When a native English speaker expresses to us his gratitude, a Chinese speaker may feel embarrassed and would sometimes say “no, no” to decline whatever expressions of gratitude. However, English speakers, in a similar situation, would say something like “I’m glad to hear it” or “I’m glad to be of help” to acknowledge and accept the thanks. To native speakers of Chinese, expressions like “Not at all” or “It’s nothing” which are sometimes used by Englishmen to turn down thanks may sometime lead to misunderstanding.

Similarly, many native Chinese speakers will feel embarrassed when they hear compliments like “You speak excellent English” or “You have acquired a native English speaker accent”. To show their modesty and that they do not deserve a compliment, they tend to use an emphatic “no”. English speaking people, unlike Chinese, will accept compliments by giving a positive response like “Thank you”, for they believe that the compliment is sincere, it is not expressions of pride or impoliteness and that the praise is not unworthy achievement. Therefore, they think it is inappropriate to show false humility, or pretended modesty.

9.5.3 Colour words

For people all over the world the colours of the rainbow are the same, but this does not necessarily follow that people speaking different languages divide the colour spectrum in the same way or use terms that designate the same range of hue. Some languages have only two colour terms: *black* and *white*. The semantic range of the terms is something like “dark” and “light”. If a language has three colour terms, this third term is invariably *red*, a term that may include yellow and orange but that has a focal point very close to the “red” of English. The other colours most commonly entering linguistic systems are *yellow*, *green*, *blue* and *brown*, making a total of seven. Languages ordinarily do not have terms for *pink*, *green*,

orange or *purple* unless the seven basic colours have previously been differentiated. Even though languages vary somewhat in their colour terminology, the variation is apparently not random. It appears to follow a pattern related to the human capacity for perceiving colours. If this is true, we might expect to find that variation in other semantic and cognitive domains is limited in a similar way.

In addition to the fact that different languages may have different divisions of colour, different languages entail different color related associations. For example, in English "green" is associated with envy or jealousy like "*green with envy*" or "*green-eyes*", and "*greenhorn*" as a person without training or experiences. "*Blue*" suggests sentimental or unhappy feelings as in "*blue, blue is my love*", or "*he is in a blue mood*". Meanwhile "*blue*" is also associated with high social position or being aristocratic as in "*He's a real blue blood.*" Another example is that people call a book with well-known names blue book in America.

9.5.4 Privacy and taboos

Although people of different culture have many common areas of privacy or taboos, there are also areas where our culture differs from Western culture. As the saying goes "*A man's home is his castle*", the western people place a high value on privacy. It is not appropriate for us to ask questions about personal information like *age, family background, salary*, or questions on personal activities. It is advisable we should not talk about such things, when conversing with English-speaking people unless they indicate clearly that they do not mind or they talk about them first themselves. Some of these questions are listed below:

How old are you?

What are your wages?

How much do you earn?

You make a lot of money, don't you?

What's your name? (Better say "May I know your name?")

How much did that pair of shoes cost you?

Moreover, we should be careful to avoid expressions related to

sexual intercourse, some organ of human body, four-letter words and racism etc.

9.5.5 Rounding off numbers

The way a speech community rounds off its numbers is not haphazard, rather, it is explainable as interplay between language and culture. Members of a speech community often give preference to the numbers that their community regards as significant. Americans, for instance, prefer to round off number to 4, as in 4 ounces in a quarter pound or 4 quarts in a gallon. A Frenchman, however, would not regard such a number as round at all; he would round off to 5 as he is familiar with the decimal system.

It is often out of linguistic convenience that people with different cultures round off numbers differently. Here are some examples to show how the Chinese and the Europeans state their age respectively. Most European systems of stating one's age are different from the Chinese system. In English culture, for example, a speaker usually states his age as his most recent birthday followed by the measure *years old* though there are exceptions with young children who often place their age between birthdays, as in

(9-1) I'm four and a half years old.

and with parents who usually express the age of infants in months and weeks, as

(9-2) The baby girl will be thirteen months old by next Friday.

We Chinese also use a round number followed by the measure *sui* in place of the English measure *years old*, however, *sui* is not exactly equivalent to "the number of years during all or part of which one has been alive". A newly-born infant, according to the *sui* measure, has already lived for part of the year and he is *yi sui*, which an English translator usually renders erroneously as "*one year old*" instead of as "*part of one year*". As a result of misunderstanding about the way Chinese speakers round off their numbers, many Europeans believe "in China you are a year old when you are born".

9.5.6 Words and cultural-specific connotations

As we have learnt that any linguistic sign may have denotative, connotative and iconic kinds of meanings, it is easy to understand that the same word in different languages may be entailed with different connotations. Connotation means “*the implication of a word, apart from its primary meaning*”, according to the Longman Modern English Dictionary, or “*the suggesting of a meaning by a word apart from the thing it explicitly names or describes*” according to the Webster. Therefore the denotation of a word, its dictionary meaning, is different from its connotation. Sometimes, a same word in two different languages may have totally different connotations. Generally the semantic differences between two languages may be grouped as the following:

- a) A term in one language that does not have a counterpart in another language.
- b) Words or terms in both languages that appear to refer to the same object or concept on the surface, but which actually refer to quite different things. For example, “*week-end*” may stir up different connotations in Chinese and English.
- c) Things or concepts that are represented by one or perhaps two terms in one language, but by many more terms in the another language, that is, finer distinctions exist in the other language.
- d) Terms that have more or less the same primary meaning, but which have considerably different secondary or additional meanings.

Therefore one must be careful in assuming that bilingual dictionary definitions give exact equivalents in meaning or that different languages always have words to express the same thing.

9.5.7 Cultural-related idioms, proverbs and metaphors

Different languages may reflect different cultures, different cultures entail different language expressions. Idioms, proverbs and sayings and metaphors in different languages, derived from differ-

ent origins, also demonstrate cultural differences. Different languages may have different idioms owing to different living environments, social conventions and literature tradition etc. For example, since English people view dog as human being's best friend, we can find more English expressions with dog than in Chinese.

lucky dog: a lucky person

clever dog: a clever boy or smart lad

dumb dog: silent person or a person who keeps secrets

lead a dog's life: to live an exhausted and unhappy life

put on the dog: put on air

And some proverbs and sayings with dogs are listed as follows.

Every dog has his day.

Dog does not eat dog.

Give a dog an ill name and hang him.

Barking dogs seldom bite.

Beware of a silent dog and still water.

Love me, love my dog.

As to metaphor, we can easily find that in Chinese anger is compared with "liquid" or "qiti" as in "wo qi si le" (I am angry to death) while in English anger is more compared with "fire" as in "He is outraged." "His face turned red with anger." "She lost her temper.", to mention just a few.

9.6 The significance of cultural teaching and learning

Language as the keystone of culture is tightly intertwined with culture. Learning a language is inseparable from learning its culture. When learning a foreign or second language, we should not only learn the mere imitation of the pronunciation, grammar, words and idioms, but also learn to see the world as native speakers do, that is to say, learn the ways in which the foreign language reflects the ideas, customs, and behavior of that society, learn to understand their "language of the mind", or **acculturation**. That is to say,

we need to learn enough about the language's culture so that we can communicate in the target language properly to achieve not only the linguistic competence but also the pragmatic or communicative competence as well. This is of great significance in learning a foreign or second language. Otherwise the ignorance of cultural differences as seen in the previous sections can create barriers in learning the target language and in communication, thus causing some unnecessary misunderstandings and confusions sometimes.

9.7 Cultural overlap and diffusion

Despite the cultural differences, there exist a greater or lesser degree of **cultural overlap** between two societies owing to some similarities in the natural environment and psychology of human beings.

In many English speaking societies in Asia such as Japan and Chinese, there are circumstances in which the superior, but not the inferior, may refer to himself by means of the same kinship-term or title with which he is addressed as in

(9-3) Have daddy/mummy/teacher told you that?

Through communication, some elements of culture A enter culture B and become part of culture B, thus bringing about **cultural diffusion**, which has been shaped gradually and unceasingly. One typical example of cultural diffusion is the appearance of loan words. When cultures come into contact, words are often borrowed from one language to another.

All languages borrow to some extent and for various reasons. Prestige, for example, was an important factor for those Englishmen who wanted to advance in government and who therefore larded their speech with Norman words during the Norman conquest in history. Later English has also borrowed many words in history from French, Latin and Greek and other languages. Besides, it is easier for a speech community when expanding beyond its borders to borrow an existing word from the indigenous language than to coin a new one. For example, we can still find in American English

many Indian words for rivers, settlements, plants and animals such as *Mississippi*, *Chicago*, *squash*, *woodchuck*, and *moccasin* etc. Nowadays, with the spreading of modern technology, more and more loan words have come into our daily use such as *email*, *IT*, *E-commerce*, *B2B*, etc.

It is worth mentioning that the borrowed words usually reflect the routes of cultural imports, for instance science from the Arabs during the Middle Ages (zero, algebra, alkali) and music from Italy (opera, soprano, piano, virtuoso). However, one point should be made clear, that is, although many languages of the world have borrowed through cultural diffusion, these loan words preserve their own grammatical structures. English is a case in point. Look at the following sentence:

(9-4) The official's automobile functioned erratically.

The sentence consists of borrowed words except "the", yet it is uniquely an English sentence.

In addition to linguistic expression, people may observe holidays of foreign origins and accept concepts from other cultures. For example, Christmas, Mother's Day and St. Valentine's Day are celebrated in many non-English speaking countries including China. Also more and more young ladies in China prefer not to tell others their ages and weight and other personal information.

Recently with the increasing cultural diffusion has been recognized a tendency of **cultural imperialism** owing to **linguistic imperialism**. Linguistic imperialism is a kind of **linguicism** which can be defined as the promulgation of global ideologies through the worldwide expansion of one language. With the monopoly of one language over others, its accompanied ideologies, structures and practices will be a potential threat to the individual cultural identity and cultural integrity.

As English is spreading rapidly as a world language, some countries have adopted special language policy to protect the purity of their languages. For example, France has made special efforts to protect its language from being corrupted by other language especially American English. This is a kind of **linguistic nationalism** against the linguistic imperialism.

9.8 Intercultural communication

Intimately related to the cultural learning when learning a foreign or second language, intercultural communication is gaining increasing popularity. Intercultural communication, also known as **cross-cultural communication**, is communication between people whose cultural perceptions and symbols systems are distinct enough to alter the communication event. It is frequently used to refer to communication between people from different cultures, which implies a comparison between cultures. It centers on significant differences regarding social relations and concept of universe from different perspectives such as language, food, dress, attitude towards time, work habits, social behavior that can cause frustration in communications and contacts. As a newly-established discipline, intercultural communication makes multi-disciplinary study of politeness across cultures in great details. It helps to bridge the gap between both cultural and linguistic differences. As the world is becoming a “global village”, its significance in international communication in various aspects and language learning is becoming more and more self-evident.

Revision exercises:

1. Try to sum up the relation between language and culture. Can you find similar relationship between local dialect and regional culture?
2. What do you think of Sapir-Whorf hypothesis? Give examples or proof to support your point of view.
3. Can you find some loan words in Chinese from other languages? Explain how they were used in the original language and how they are used now?
4. Based on your own learning experiences, please illustrate to what extent it is necessary to learn its culture when learning a

foreign language.

5. What do you think of linguistic imperialism and cultural imperialism? Is it nonsense or something worth consideration?
6. Work out the meaning of the following underlined expressions. Find its origin and corresponding Chinese expressions.
 - a) The boss offers a high pay, but he wants his pound of flesh back in return and make them working very hard.
 - b) All work and no play makes Jack a dull boy.
 - c) That's a dear John letter saying that she would never come back again.
 - d) The best fish swim near the bottom.
 - e) By so doing, they have actually opened a Pandora's box.
 - f) Any engineer worth his salt should know how to deal with such problems.
 - g) The little girl is the apple of her father's eye.

10 LANGUAGE ACQUISITION

10.1 Introduction

Language acquisition refers to the child's acquisition of his mother tongue, i.e. how the child comes to understand and speak the language of his community. Children all over the world learn to speak at about the same time unless they are isolated during the critical acquisition years or unless they suffer from extreme external deficiency. How do children accomplish this? What enable children to learn words and string them together into meaningful sentences? What facilitate children to develop the grammatical system of their language? What help them to achieve the communicative competence using the language to express their various needs? All these have been attracting the time and efforts of linguists, psycholinguists and psychologists.

This chapter will provide some tentative answers to the above questions concerning how language is learned. Some child language acquisition theories will be first introduced, then the Critical Period Hypothesis and learning environment will be discussed with exemplification and finally the stages of language learning presented briefly.

10.2 Theories of child language acquisition

Generally speaking, there are mainly three different theories con-

cerning how language is learned, namely the behaviorist, the interactionist, the interactionist views.

10.2.1 A behaviourist view of language acquisition

Traditional behaviorists view language as behavior and believe that language learning is simply a matter of imitation and habit formation. A child imitates the sounds and patterns of the people around him; people recognize the child's attempts and reinforce the attempts by responding differently, the child repeats the right sounds or patterns to get the reward (reinforcement). The child learns the language gradually in much the same way as habit-forming. So imitation and practice are preliminary, discrimination and generalization are key to language development in this theory.

Imitation: word for word repetition of all or part of an utterance.

(10-1) **Mother** Would you like some bread and peanut butter?

Katie Some bread and peanut butter.

Practice: repetitive manipulation of one structure/pattern.

Michael I can handle it, Hannah can handle it. WE can handle it.

The chief exponent of the behaviourist view is B. F. Skinner. This view was prevalent before the 1960s, after that it was under challenge and criticism for its deficiencies discovered later.

Look at the following example:

(10-2) **Peter** (25 months)

(Peter, Patsy, and Lois are playing with pencil and paper)

Peter (indicating he wants Patsy to draw) Lois. Lois too. Patsy. Lois too!

Patsy You want me to make a car? OK.

(Patsy draws a tiny car like Lois')

Patsy Oh, you want Lois to have some paper?

Peter Lois have some paper?

(later)

Patsy Let's see if I can draw what you draw. Draw

something!

Peter Draw something!

(Chosen from P. M. Lightbown & N. Spada, 1996)

This example shows that children do not imitate adults' speech in much the same way as parrots do. They imitate words selectively and according to their own understandings of the sounds or patterns, which is based on what the children have already known instead of what is 'available' in the environment. This reveals the behaviorist views' inadequacy in explaining how children acquire complex language system. In addition to the fact that sometimes children are very much in charge of the conversation and the activity with the adult(s), children seem to pick out patterns and generalize them to new contexts. They create new forms or new uses of words until they finally figure out how the forms are used by adults.

The behaviorist theory of child language acquisition offers a reasonable account of how children acquire some of the regular and routine aspects of the language, yet how they acquire more complex grammatical structures of the language requires a different explanation.

10.2.2 An innatist view of language acquisition

Owing to some puzzling evidence that all the children virtually learn their native language which is so complicated at almost the same time in life, that children successfully master the basic structure of their language or dialect in various conditions and that the language children are exposed to may not contain examples of all the information which they eventually know, the linguist Noam Chomsky claims that human beings are biologically programmed for language and that the language develops in the child just as other biological functions such as walking.

Originally Chomsky referred to this innate ability as **Language Acquisition Device**, (also known as LAD). The LAD was described as an imaginary "black box" existing somewhere in the human brain. The "black box" is said to contain principles that are univer-

sal to all human languages. Children need access to the samples of a natural language to activate the LAD, which enables them to discover his language's structure by matching the innate knowledge of basic grammatical system to that particular language. Later Chomsky prefers this innate endowment as **Universal Grammar (UG)** and holds that if children are pre-equipped with UG, then what they have to learn is the ways in which their own language makes use of these principles and the variations on those principles which may exist in the particular language they are learning.

This view in a way serves as an answer to the **logical problem** of language acquisition that the behaviorist view fails to recognize. The logic problem means the fact that children come to know more about the structure of their language than they could reasonably be expected to learn from the language samples they hear. So when exposed to confusing information or when guidance or correction is not available, children, born with UG, can discover for themselves the underlying rules of the language system. A typical example is provided by Lydia White (1989) and Lightbown and Spada (1993) to illustrate the complex relationships between the reflexive pronoun and its antecedent in English. The following sentences contain the reflexive pronoun "*himself*". Both the pronoun and the noun it refers to (the antecedent) are italicized. An asterisk (*) at the beginning of a sentence indicates that the sentence is ungrammatical.

- (10-3) a. *John* saw *himself*.
b. * *Himself* saw *John*.

In (a) and (b), it seems that the reflexive pronoun must follow the noun it refers to. But (c) disproves this:

- c. Looking after *himself* bores *John*.

Now consider these two sentences:

- d. *John* said that *Fred* liked *himself*.
e. * *John* said that *Fred* like *himself*.

Can the closest noun phrase be the antecedent usually? Again (h) disproves it:

- f. *John* promised *Bill* to wash *himself*.

The situation becomes more complicated in the following two sen-

tences:

g. *John* believes *himself* to be intelligent. (not-finite clause)

h. **John* believes that *himself* is intelligent. (finite clause)

The innatists argue that children could not discover the rules of reflexive pronouns by trial and error. Instead children's acquisition of these grammatical rules is guided by principles of an innate UG. Different languages have different rules about reflexives, and children seem to be able to 'know' the rules by being exposed to a limited number of examples.

10.2.3 An interactionist view of language acquisition

The **interactionist** view holds that language develops as a result of the complex interplay between the human characteristics of the child and the environment in which the child develops. Integrated with the innatist view, the interactionist further claims that the modified language which is suitable for the child's capability is crucial in his language acquisition.

In the everyday life people often come across the situations in which adults speak differently when talking to little children, they use a "special" speech known as "**motherese**" or child directed speech (CDS) or "**caretaker talk**" to make themselves understood by the children. The motherese or caretaker talk shares the following characteristics: slow rate of speech, high pitch, rich intonation, shorter and simpler sentence structures, frequent repetition, paraphrasing and limited vocabulary. In addition, the topic of such talk is closely related to the 'here and now' environment.

The importance of such modified speech can be illustrated in the case of Jim. Jim, a hearing child born to deaf parents, had little contact with hearing adults up to the age of 3 years and 9 months. His only contact with oral language was through television programs he watched frequently. A language proficiency test showed that he was very much below his age level in all aspects of language. He used unusual and ungrammatical word order to ex-

press ideas appropriate to his age. After a period of conversation sessions, Jim's language ability improved dramatically. This reveals the importance of comprehensible language samples exposed to children. Only when conversations provide the right level of language that children are capable of processing can they facilitate children's language acquisition, otherwise, it is insufficient for children to learn the language's structure as Jim's example has revealed.

The foregoing views attempt to explain child language development from different perspectives. Behaviorists view sounds reasonable in explaining the routine aspects, the innatist accounts most plausible in explaining children's acquiring complex system, and the interactionist description convincing in understanding how children learn and use the language appropriately from their environment.

10.3 Cognitive factors in child language development

The controversies about how first language is acquired also revolves around cognitive factors. Some people call it the cognitive theory of language acquisition.

The cognitive factors relate to language acquisition mainly in two ways. First, language development is dependent on both the concepts children form about the world and what they feel stimulated to communicate at the early and later stages of their language development. For example, children at early stage can use two-word utterances to express a wide range of meanings; but they may not use English perfect tense (he has walked, etc.) until they have acquired the underlying concept of 'present relevance' around the age of four and a half. Meanwhile, the 'present relevance' embodied in the perfect tense helps to stimulate the English-speaking children to form that concept. Thus, as children's conceptual development leads to their language development, it is likely that their lan-

guage development also helps in the formation and enhancement of the concept.

Secondly, the cognitive factors determine how the child makes sense of the linguistic system himself instead of what meanings the child perceives and expresses. Many careful studies of children's acquisition sequences and errors in various languages have revealed that children have some "operating principles" for making sense of language data. For example, most children experience the following similar process of learning the negative form.

i. At first, the negative element is not part of the structure of the sentences. It is simply attached to the beginning or end, as in:

No singing song.

No the sun shining.

ii. The negative element is inserted into the sentence. Instead of *no* or *not*, children may use *don't* or *can't*, but they do not yet inflect these for different persons or tenses:

I no want envelope.

He no bite you.

He don't want it.

iii. Children begin to produce the appropriate part of *do*, be or the model verbs, to suit the person or tense:

You don't want some supper.

Paul didn't laugh.

I am not a doctor.

(Adapted from Littlewood, 1986:11)

This demonstrates that in the course of acquiring the native language, children seem to look initially for a system which is rule-governed in a consistent way, then a system in which the clues to meaning are clearly displayed, and finally the one in which each item or distinction has a definite function in communicative meaning.

10.4 Language environment and the Critical Period Hypothesis

All child language acquisition theories talk about the roles of two factors to different degrees: the linguistic environment children are exposed to and the age they start to learn the language. These two factors bear remarkable relevance to their language development. This subsection is devoted to the discussion of these factors.

In behaviorist approach, language environment plays a major role in providing both language models to be imitated and the necessary feedbacks among which the positive reinforcement or reward encourages children's efforts and facilitates the "correct" learning of the language while the negative feedback discourages children to repeat the "mistakes". However, the innatist view emphasizes more on children's internal processing of the language items to be learnt. The environment functions as a stimulus that triggers and activates the pre-equipped UG to process the materials provided by the linguistic environment around the children. The interactionist view calls for the quality of the language samples available in the linguistic environment, only when the language is modified and adjusted to the level of children's comprehension, do they process and internalize the language items.

Closely related to the external language environment, age is another factor that is worth mentioning in first language acquisition. Observed that children's ability to develop normal behaviors and knowledge in environments does not continue indefinitely and that children who have never learned language (for various reasons) cannot return to normal if these deprivations go on for too long, Eric Lenneberg, a biologist, argued that the LAD, like other biological functions, works successfully only when it is stimulated at the right time — a specific and limited time period for language acquisition — which is referred to as the **Critical Period Hypothesis (CPH)**.

There are two versions of the CPH. While the strong one suggests that children must acquire their first language by puberty or they will never be able to learn from subsequent exposure, the weak holds that language learning will be more difficult and incomplete after puberty. These two views can find some support respectively in Victor's and Genie's cases.

Victor had been deprived of language contact for 12 years when he was found naked in the woods of Aveyron in France. Upon capture, he was found completely wild. A young doctor, Jean-Marc-Gaspard Itard, devoted five years to civilizing Victor and teaching him French. In spite of some success in developing Victor's sociability, memory, judgment, and all the functions of his senses, Victor remained unresponsive to all sounds other than those which had meaning for him in the forest such as the cracking of nuts, animal sounds, or the sound of rain. He only succeeded in saying two words: "lait" and "O Dieu". Finally, Itard gave up. Genie was a thirteen-and-a-half-year old girl when first discovered in 1970. She had been tied to a chair or a crib in a small and darkened room since the age of 20 months. Due to this isolation, deprivation of language and abuse, she was unsocialized, primitive and undeveloped physically, emotionally and intellectually and could not speak. With all the desired care and treatments and after five years of exposure to language during which a normal child would have developed an elaborated language system, Genie's language contained many of the features of abnormal language development.

Despite the above mentioned differences, people have now reached the consensus that there is a critical period for first language acquisition. This is proved by some recent natural experiments conducted by Elissa Newport and her colleagues (1990) on three groups of deaf sign users: (1) native signers who were born to deaf parents and exposed to sign language from birth, (2) early learners who were first exposed to American Sign Language (ASL) at the age of 4 to 6 at school, and (3) later learners whose first exposure to ASL began after the age of 12. The results show that the native signers outperform both the early signers and the later signers and were highly consistent in their use of the grammatical

forms.

10.5 Stages in child language development

Since the 1960s, many studies have been conducted to examine the underlying progress of children's language acquisition. The following will outline some main stages of children's language development.

10.5.1 Phonological development

Children are born with an ability to discriminate and produce sounds, and the acquisition of sounds is universal across all culture and languages. The sequence in which the sounds are acquired works like a system of pre-requisites, that is to say, the child must pass each stage before he can proceed to the next one. For example, the presence of palatal and velar sounds presupposes the presence of labials and dentals. But the presence of labials and dentals does not imply the presence of palatal and velar sounds. Similarly the three basic vowels [i:] [u:] [ɑ:] (front-central-back) form a minimum vowel system for the languages of the world.

The following table shows the appearance of consonant phonemes in English, with respect to chronological age:

By	2	p	b	m	n	w	
	$2\frac{1}{2}$	t	d	k	g	ŋ	h
	3	f	s	l	j		
	4	ʃ	v	z	r	tʃ	dʒ

10.5.2 Vocabulary development

There is no clear line between babbling and speech. Most children produce their first words such as "papa", "dada" and "nana" typically between the age of nine and twelve months. At first, children simply utter these words without reference to any particular person; most parents may mistake the sounds as the recognition of fa-

ther, mother etc. It used to be thought that adults determined sounds babies made. Now it is believed adults can increase the amount of babbling by paying attention to the sounds, they can't change the sounds baby make.

The most obvious fact about vocabulary development is that it goes hand-in-hand with the child's environment. First words are labels for things in the environment. When the child learns a word, he learns not only how to pronounce the word but also the meaning of each form and how each form is different in meaning from every other form. In other words he must learn the features of meaning associated with each word.

a) Under-extension

Children do not learn the meaning of a word "all at once". When a child learns a new word, he may well under-extend it or overextend it. For example, the child may get confused at hearing the color of white used for paper when he/she first thought it as the word for snow. The common denial that birds are animals is also a typical example of under-extension.

b) Over-extension

Overextension happens when a child takes a property of an object and generalizes it. It is likely to occur later rather than immediately following the acquisition of a word. Over-extension is based on both the extension of categories (*apple* for all fruit) or analogies (*apple* for anything round) and the extension of family resemblances such as *clocks* extended both to *bracelet* and to the sound of dripping of water, which sounds like *tick, tick, tick*. Take the word "*daddy*" for example. At the very beginning a young child calls all adults "*Daddy*". In this case "*Daddy*" has the meaning feature [+ Adult]. If the child calls all men "*Daddy*", and refers to women in some other way, we can say that for him "*Daddy*" means

{ + Adult }

{ + Male }

In other words children "over-extend" the meanings of early words. Later the child will acquire the conventional meaning of "*Daddy*", i.e.

- { + Adult }
- { + Male }
- { + Parent }

and in speech he will formally distinguish his father from all other adult males.

In addition to the above semantic features analysis theory, **lexical contrast** and **prototype** theories are also proposed to explain how children acquire their vocabulary or lexicon. The lexical contrast theory holds that children have conventional words for things. They use conventional words for something else when a proper word is available, then they contrast it with other word(s). The prototype theory believes that children may begin a word with a prototype and extend its features later.

10.5.3 Grammatical development

Around the age of two, children begin to produce two-word utterances. They are typically the examples of **telegraphic speech**. This kind of speech contains **content words** which give us the information and lacks the **function elements**, or function words which by themselves tell us nothing. During this stage there are no syntactic or morphological markers, that is, they use no inflections for number, person, or tense, and so on. It has been noted that in noun + noun sentences the two words can express a number of different grammatical relations which will be expressed later by other syntactic devices. Here is an example, "*Mommy sock*" can be used either to show a subject + object relation in the situation when the mother is putting the sock on and the child is pointing to Mommy's sock or to show possession, meaning "*This is Mommy's sock*".

About 6 months later, the 2-word utterances phase will develop into sentences which contain three main elements, e.g.

- (10-4) daddy kick ball
- (10-5) that big bag
- (10-6) put truck window

The child's utterances are not simply randomly-strung-together words but, from the very early stage, reveal his or her grasp of the

principles of sentence formation.

As children learn vocabulary they are also learning morpho-syntax rules, or grammar. Children acquire their first morphemes in a predictable order. This order is to a large extent determined by the linguistic complexity rather than the frequency of input. For example, the plural morpheme only marks number, the present progressive marks only duration, the acquisition of these items come early. But owing to their complexity in meaning and use, auxiliary verbs are difficult and the acquisition comes later.

People have studied how children learn negative and questions. The negative comes in stages as shown in 10. 3. Similarly, children's learning of question constructions demonstrates the increasing complexity.

At first, the child forms a question by using a *question intonation* (a rise of pitch at the end of the sentence):

(10-7) Fraser water?

(10-8) Sit chair?

At the next stage the child merely "takes on" a question word in front of the sentence; he doesn't change the word order, or insert *do*:

(10-9) What he wants?

(10-10) Where I should put it?

(10-11) Why you smiling?

It is until they have acquired auxiliary words that they can use the questions correctly. It is worth mention that during the process coordination is also required in each stage and depends on the semantic contexts.

While children are increasing their mastery of grammatical morphemes, they are also increasing their ability to carry out 'transformations' of the basic sentence structure so as to produce more complex utterances. This grammatical development is partly a matter of growing 'competence' (in the sense of underlying knowledge) and partly a matter of increasing 'performance' capacity. Some subtle grammatical distinctions may not be mastered much before the age of ten.

10.5.4 Pragmatic development

While children are acquiring morpho-syntax and vocabulary, they are also acquiring pragmatics, or how to speak to others in an appropriate manner. These include, for example, the greetings to be used, the **taboo words**, the polite forms of address and the various styles appropriate to different speech situations of his community.

One important aspect is gender. By the age of three, the child may vary his speech style when he starts imitating certain roles. For instance, a boy may show he is being an adult by saying to younger children, "*Come to dadda, there's a good girl*" etc. This shows the child is aware that certain ways of speaking are appropriate to special roles. Besides, gender differences can also be found in the topics and quantity of children talk.

Politeness is one of the few aspects of speech that are explicitly taught by adults. Approximately at the age of three or four, parents begin to introduce comments which focus attention on the appropriate use of language. They say constantly "*Don't talk when I'm talking*", "*Don't shout at the table*," etc. A typical example is that the hundreds of times parents remind children to say *please* and *thank you*:

(10-12) Child: Can I have a cake?

Parent: What do you say?

Child: Please.

Parent: Yes.

(10-13) Parent: Here's an ice-cream

(Child accepts it.)

Parent: What do you say?

Child: Thank you.

Parent: That's right.

Gradually the child learns the intention beneath the linguistic form. In other words he has to learn to "read between the lines". Look at the following school dialogue:

(10-14) Teacher: That tube's broken.

Child: Yes, sir.

Teacher: Don't just say "yes sir". I want to know who did it.

Here the statement actually functioned as a request for information, but the child did not understand this. Most parents introduce these subtleties in their speech when the child is about three years old. By the age of three or four, children can respond to indirect requests and produce polite direct requests. By the age of elementary school they can produce both direct and indirect requests. By the age of seven or eight, they are able to hint.

10.6 Atypical development

Not all the children achieve the same level of language development. Some acquisition may be delayed but follow the same rules of language development. Atypical language development (abnormal language development) may occur due to trauma or injury.

The atypical language development includes **hearing impairment** (which can be slight or severe and may lead to minor loss or total lack of language), **mental retardation** (which may cause a delayed language acquisition), **autism** (language impairment from the very beginning), **stuttering** (repetition of sounds, syllables, or phrases where the speaker can not "release" the words), **aphasia** (partial or total loss of language due to brain damage) and **dyslexia** and **dysgraphia** (disorders in reading and writing which may be acquired or developmental). Recently people have made lots studies in these aspects to investigate more on the nature and process of first language acquisition.

Revision exercises:

1. Try to explain the terms:
Language acquisition
Language Acquisition Device
Critical Period Hypothesis,

2. Among the language acquisition theories mentioned in this chapter, which one do you think is more reasonable and convincing? Explain why.
3. Which of the following statements are TRUE and which are FALSE? Why?
 - a) All normal children have equal ability in learning their first language.
 - b) It is easy for parents to teach their children grammar.
 - c) The young child is not taught to speak, or to understand his language. There is no formal learning of grammar or pronunciation practice.
 - d) At first children do not inflect nouns or verbs.
 - e) Children learn their native language well whenever they start and whatever kinds of language samples they receive.
 - f) The ability to learn a second language as an adult may vary considerably between individuals.
 - g) For a child to acquire his mother tongue the most basic requirement is that he hears people speaking this language. He will then begin to learn the language.
 - h) Phonology and grammar are finite, tightly structured systems, the child must master them before puberty in order to be a native speaker of the language.

11 SECOND LANGUAGE ACQUISITION

11.1 Introduction

Second language acquisition (SLA), formally established itself as a discipline around the 1970s, refers to the systematic study of how one person acquires a second language subsequent to his native language. Here the “second” language is not opposite to “foreign” language. Whether the **target language (TL)** to be learnt is called a **second language** or a **foreign language (FL)** depends on its status as a second language or foreign language in the country. Although second language learning is different from foreign language learning in many aspects, people tend to treat them equal and apply second language acquisition research results to foreign language learning and teaching. In this chapter some key notions and models will be introduced and discussed to shed some light on second/foreign language learning in general.

11.2 Connections between first language acquisition and second language acquisition

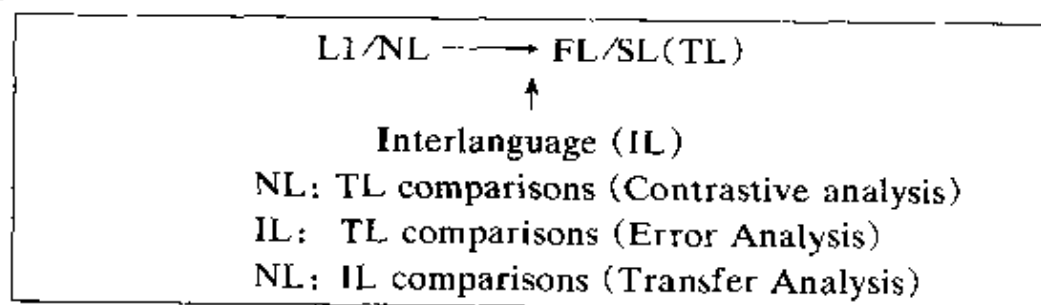
The studies on the first language acquisition have influenced enormously those on the second language acquisition at both theoretical and practi-

cal levels. Theoretically the new findings and advances in first language acquisition especially in learning theories and learning process are illuminating in understanding second language acquisition. The techniques used to collect and analyze data in first language acquisition also provide insights and perspectives in the study of second language acquisition. Just as Littlewood (1986:4) summarizes, the first language study has served as a backcloth for perceiving and understanding new facts about second language learning.

However, second language acquisition, just as the term itself suggests, is different from first language acquisition and the second language learners generally fail to attain native-like competence. The language they produce, which is called **interlanguage (IL)** (interlanguage, according to Selinker's definition, is defined as an abstract system of learner's target language system, it has now been widely used to refer to the linguistic expressions learners produce especially the wrong or not idiomatic ones) or **learner language**, tends to become fossilized at certain level. **Fossilization** has become one of the main features of interlanguage. Some experts relate this to the learners' partial access or no access to the **Universal Grammar**, others hold that even if learners have full access to the **Universal Grammar**, it is done through their native language, and therefore, their language is short of native-like proficiency.

Despite the fact that the extent and significance of the first/second language contrast and what accounts for is still much under study and discussion, the development of second language acquisition has undergone some changes as illustrated in Figure 11-1. The following is to discuss the paradigms in details.

Figure 1 Points of comparison for successive foreign language learning paradigms



(Chosen from James (1998:3))

11.3 Contrastive analysis

Influenced by the behaviorism view that second language learning was seen as the development of a new set of habits, the native language took on great significance for it was regarded as the major cause for lack of success in learning a second language or foreign language. And a distinction was made between **positive transfer** and **negative transfer**. While the former would facilitate target language learning, the later would interfere. Therefore in second/foreign language learning and teaching the basis of language instruction was the differences between the native language and target language, **Contrastive Analysis** (known as **CA**) came into fashion in the 1960s.

Starting with describing comparable features of the native language and target language (e.g. tense, words or expressions etc.), contrastive analysis compares the forms and meanings across the two languages to spot the mismatches or differences so that people could predict learners' difficulty. For example, between English and French, there are many "false friends", the wrong use of words and phrases which are rather similar in spelling and sound yet different in meaning and function. This is usually out of a direct transfer from learners' native language French. Such native language transfer errors may also occur when Chinese English learners simply transfer Chinese collocation or expressions to English as **"to touch the society"* and **"there are more people come to study in the States"*, which will be better accounted for in 11.7 later.

However, the contrastive analysis was soon found problematic, for many of the predictions of the target language learning difficulty formulated on the basis of contrastive analysis turned out to be either uninformative: teachers had known about these errors already or inaccurate. Predicted errors did not materialize in learner language while errors did show up that the contrastive analysis had not predicted. People come to realize that "*Difference*" and "*Diffi-*

culty" are not identical concepts. In addition, because of its association with an outdated model of language description (structuralism) and the increasingly discredited learning theory (behaviorism), the once predominant contrastive analysis was gradually replaced by **Error Analysis (EA)**.

11.4 Error Analysis

The contrastive approach to learners' errors has shed new light on people's attitudes: the errors are significant in telling the teacher what needs to be taught, in telling the researcher how learning proceeds and those errors are a means whereby learners test their hypotheses about the language to be learnt. They are worth further probing. Error analysis involves, first independently or objectively, describing the learners' interlanguage (that is, their version of the target language and the target language itself), then a comparison of the two is followed to locate mismatches. Different from contrastive analysis, error analysis gave less consideration to learners' native language. By the late 1960s, error analysis had become the acceptable alternative to the behaviorism-tainted contrastive analysis and entered its heyday in the 1970s.

In the efforts to categorize learners' errors and to find out ways to avoid or remedy errors, two main sorts of errors were diagnosed: **interlingual** errors and **intralingual** errors. The interlingual errors mainly result from cross-linguistic interference at different levels such as phonological, lexical, grammatical or discoursal etc. Followed are some examples.

(a) Substitution of [t] for [θ] and [d] for [ð]

Some Chinese learners of English tend to pronounce *three* as *tree* and *this* as *dis*. This is perhaps caused by interlingual interference because there are no such phonemes as [θ] and [ð] in Mandarin.

(b) Shortening of long vowels

Words like *sheep* and *meat* ([i:]) are often pronounced as *ship* and *mit* ([i]) respectively, and some learners may never bother to

distinguish between *fourteen* and *forty* (here [ɪ] is pronounced as [eɪ]).

The intralingual errors mainly result from faulty or partial leaning of the target language, independent of the native language. There are learning strategies-based errors, communication strategies-based errors, induced errors, and some compound and ambiguous errors among which overgeneralization or cross-association have been well exploited.

i. Overgeneralization

Overgeneralization is defined as the use of previously available strategies in new situations. In second language learning some of these strategies prove helpful in organizing the facts about the second language. For example:

(11-1) Jane advised me to give up smoking.

The learner may infer

(11-2) Jane told me to give up smoking.

Yet it will be misleading and inappropriate to infer

(11-3) *Jane suggested me to give up smoking.

For more examples:

(11-4) The girl is in a blue ski jacket.

(11-5) The girl is dressed in a blue ski jacket.

(11-6) *The girl is worn in a blue ski jacket.

Clearly these mistakes are not due to the interference of the native language, but largely due to what the learners know of the target language, or by their intuitions, or even some communication strategies in other situations.

ii. Cross-association

In English we sometimes may come across words which are similar in meaning. Their spelling and pronunciation are also alike. The close association of the two often leads to confusion. This aspect of internal interference is often referred as cross-association. Cross-association may operate at all levels of language from phonological to syntactic. *other/another*; *much/many*; *stalagmite/stalagmite* are some pairs. Take the *too* + *adj.* + *to* + *verb* structure for example.

(11-7) The coffee is very hot.

I can't drink it.

If we join them together, it will be like:

(11-8) The coffee is too hot to drink.

If students are asked to join the following in a similar way,

(11-9) The apricot is sour

I can't eat it.

Most probably some students may produce 'hybrid' sentences like:

(11-10) * The apricot is too sour to eat it.

Linked with the division between **competence** and **performance**, **mistakes** and **errors** were further distinguished. While errors defined as unintentionally deviant from the target language and not self-correctible by the learner suggest failure in competence, mistakes as either intentionally or unintentionally deviant forms and self-correctible suggest failure in performance. This division has provided new insight on people's treatment of errors and later brought life to **Performance Analysis**.

However, error analysis started to be attacked for its neglect of learners' non-errors, the subjectivity of its interpretation of errors, its poor statistical inference, and its lack of any predictive power that any scientific procedure must have. Most importantly, learners' role as active participants in learning did not receive due attention. As the 'insufficiency of error analysis' mounted, error analysis was regarded obsolete by the mid-1970s, the theoretical ground was being cleared for the new interlanguage paradigm.

11.5 Interlanguage

Proposed by S. Pit Corder and Larry Selinker, the concept of **interlanguage** was established as learners' independent system of the second language which is of neither the native language nor the second language, but a continuum or approximation from his native language to the target language. What learners produce, correct or wrong, are evidence of the approximation from their first language to the target language. From then on by means of various data col-

lection methods and analysis, researchers have been making painstaking efforts in the hope that some universal developmental sequence of second language learners' interlanguage would be discovered. People have conducted studies on interlanguage from linguistic, psycholinguistic, sociolinguistic, pragmatic and cognitive and other perspectives.

Among the three important characteristics — systematicity, permeability and fossilization — of interlanguage, fossilization is defined as (in second and foreign language teaching) a process occurring from time to time in which incorrect linguistic features become a permanent part of the way a person speaks or writes a language. Aspects of pronunciation, vocabulary usage, and grammar may become fixed or fossilized in second or foreign language learning. In addition to the easily confusing pair of phonetic sounds described in 11.4, other common errors such as [l] and [n], [ei], [e] and [æ] are typical fossilized phonetic mistakes in Chinese English learners. These fossilized features of pronunciation contribute to a person's foreign accent. Other typical errors in grammar and vocabulary uses are "*he/she has/have ...*" and "*to touch the society*" etc. Fossilization may occur at any time and at any level. So far various causes have been listed to account for this phenomenon such as lack of acculturation, will to maintain identity, inappropriate extrinsic feedback, cognitive maturation, satisfaction of communicative needs, lack of control, quality of input, lack of input, native language influences and instruction etc. .

Fossilization is now gaining increasing attention and scholars are doing their best to explain why, to some extent, learners are short of native-like proficiency in their target language learning. Yet as to how to account for the backsliding in learning at different levels and how to destabilize or defossilize the fossilized items remain to be further explored.

11.6 The role of native language in second language learning

From the above it can be inferred that the native language plays an inseparable role in second language learning and people can't afford to ignore it. Hence, the role of native language in learners' second language learning is worth careful examination.

In the heyday of behaviorism, people noticed learners' use of prior linguistic information (chiefly his mother tongue) or some physically carryover of native language surface to a second language context (e.g. "to touch the society" the direct transfer from Chinese collocation to English collocation), namely **language transfer**. They found the differences between native and target languages would either lead to positive transfer or negative transfer, also known as **interference**. The behaviorists ascribed errors largely to the interference of learners' native language. Their native language habits prevented them from learning second language habits. Contrastive analysis between the languages was carried out to predict learning difficulties.

With the fade-out of behaviorism, the mentalists argued that few errors were caused by language transfer; they play down the role of first language. However, this view does not hold water either. Meanwhile, the interlanguage position put learners' first language back to the whole picture and studied its role from a cognitive perspective. Learners use their first language to formulate second language learning hypothesis. In this sense, native language functions as a kind of "input from inside", therefore transfer is not transfer, but a kind of mental process.

Recent studies have discovered that there are three interacting factors in determining language transfer in second language learning: a) a learner's psychology, how a learner organize his or her native language, b) perception of native-target language distance, c) actual knowledge of the target language. The native language in-

fluences not only occur as direct linguistic reflexes at phonological, lexical, semantic, syntactical or discorsal levels but also directly reflect underlying organizational principles of languages at cognitive level. L1 transfer may result in learners' avoidance of certain target language structures, different learning rates, overproduction and different learning paths etc..

11.7 Second language learning models and input hypothesis

Similar to people's attempts to account for first language acquisition, it has been accepted that second language acquisition is a complex phenomenon that cannot be described in all aspects by any existing model today. What is essential in understanding second language acquisition is to understand how various research areas and theories relate to one another.

While the behaviorism model emphasized the role of imitation and positive reinforcement, a "nurture" position, the mentalists or the innativists shifted to a "nature" position by stressing that human beings, equipped innately with **language acquisition device (LAD)**, are capable of language learning provided with adequate input.

Therefore it can be seen that currently the models and theories of second language acquisition are mainly divided on the point: to what extent second language acquisition is a function of innateness. Those who adopt an innateness position believe that a learner's structural knowledge allows him or her to construct the grammar of the target language on the basis of limited data. The opposite holds that language acquisition and social interaction are mutually dependent and that language acquisition cannot be understood if detached from the context it occurs.

Even among the innativists, researches' answers vary to the question whether the innate knowledge about language is available to adults learning a second language. Departed from the view that

the children's linguistic and cognitive abilities develop in adjacency and are both embedded in context, the social interactionists argue that language and social interaction cannot be separated. In the case of second language learning, one can hardly understand the development of grammatical knowledge devoid of interaction with the learning situation.

Among different theories and models Krashen's **Input Hypothesis** is worth mentioning. Krashen assumed that there were two independent means or routes of second language learning **acquisition** and **learning**. Acquisition is a process similar to the way children acquire their first language, it is a subconscious process without minute learning of grammatical rules. Learners can hardly be aware of their learning but they are using the language to communicate. People refer it to implicit learning, informal learning or natural learning etc. Learning as another route is a conscious learning of the second language knowledge by learning the rules and talking about the rules. In addition to the distinction, Krashen put forward that learners advance their language learning gradually by receiving "**comprehensible input**". He defined comprehensible input as " $i + 1$ ": i represents learners' current state of knowledge, the next stage is a $i + 1$. By providing comprehensible input which is bit higher than the learners' current level, the learners' LAD will be activated and contribute to acquisition. In Krashen's view the input hypothesis is central to all acquisition and has implications for the classroom.

Krashen's input hypothesis received criticism later for he mistook "input" as "**intake**" (the actual share of input that has been internalized by the learner). Although Krashen gave some indications, his input hypothesis can hardly answer the question when and what learner need in learning a second language.

11.8 Individual differences

In addition to the common aspects of second language learning as mentioned above, people learn a second or foreign language at dif-

ferent rate with different attainments. Also people vary in their time and efforts spent on learning, and most notably in their different language aptitudes, motivation, and use of learning strategies, age of acquisition and personality etc.

Language aptitude Language aptitude here refers to a natural ability for learning a second language. It is believed to be related to a learner's general intelligence. John Carroll once identified some components of language aptitude: phonemic coding ability, grammatical sensitivity, inductive language learning ability, and rote learning ability. It has been generally accepted that learners who achieve high scores in language aptitude tests learn rapidly and achieve high proficiency in second language learning. Yet how the components work on the learner's interlanguage development still remains speculative.

Motivation While language aptitude works on the learner's cognitive mechanism, motivation, defined as the learner's attitudes and affective state or learning drive, has a strong impact on his efforts in learning a second language. Generally four types of motivation have been identified:

***Instrumental motivation** : which occurs when people learn a foreign language for external goals such as passing exams , financial rewards or furthering a career etc .*

***Integrative motivation** the drive that people learn a foreign language because of the wish to identify with the target culture .*

***Resultative motivation** : learners learn a second language for external purposes*

***Intrinsic motivation** : learners learn the second language for enjoyment or pleasure from learning .*

Since motivation is a highly complex phenomenon, it is difficult for researchers to reach a consensus on it. However, experts have proved that all types of motivation promote learning and they are complementary to each other. Learners' motivation may ebb and flow at times and in accordance with their particular interests, learning involvement and the learning context. As learners' strong motivation promotes their learning, their learning progress or achievement will in return enhance their language learning motiva-

tion further.

Learning strategies Learning strategies are learners' conscious, goal-oriented and problem-solving based efforts to achieve learning efficiency. Motivation plays an important role in learners' use of learning strategies. Among various divisions of learning strategies, those by Chamot (1986) and Oxford (1990) are widely accepted.

Cognitive strategies : strategies involved in analyzing , synthesis , and internalizing what has been learned .

Metacognitive strategies : the techniques in planning , monitoring and evaluating one's learning

Affect /social strategies : dealing with the ways learners interact or communicate with other speakers , native or non-native .

Each of these categories is consisted of some sub-categories. For example, cognitive strategies include how to use target language reference materials, how to apply rules to understand or produce second or foreign language sentences, how to make up rules based on language analysis, how to use inference in learning and how to take notes and make summaries etc. Under metacognitive categories are planning skills such as self-management, paying attention to important things selectively, monitoring skills such as checking one's own reading comprehension and self-evaluation skills which enable learners to become more aware of their progress and weaknesses. And the affect/social strategies consist of necessary communication strategies so that learners can get the information or help they needed.

With the development of strategy study, Cohen (1998) further distinguishes language learning strategies and language using strategies. While language learning strategies include strategies for identifying the material to be learnt, distinguishing it from others, grouping it for easier learning, committing the material to memory etc. , the language using strategies include four subsets: retrieval, rehearsal, cover and communication strategies.

Since all learners, good learners and underachievers, use somewhat similar strategies, it has been notoriously difficult for researcher to reach a consensus in strategies studies. So far what has been accepted is that successful learners tend to use more strategies

and use them more selectively and flexibly. For example, they use different strategies at different learning stages; they are also adept at using meta-cognitive strategies to manage their learning.

The following listed are some strategies which are used commonly by good learners.

1. Find their own way, taking charge of their learning.
2. Organize information about language
3. Are creative, developing a "feel" for the language by experimenting with its grammar and words.
4. Make their own opportunities for practice in using the language inside and outside the classroom
5. Learn to live with uncertainty by not getting fluttered and by continuing to talk or listen without understanding every word.
6. Use mnemonics and other memory strategies to recall what has been learned.
7. Make errors work for them and not against them.
8. Use linguistic knowledge, including knowledge of their first language, in learning a second language.
9. Use contextual cues to help them in comprehension.
10. Learn to make intelligent guesses.
11. Learn chunks of language as wholes and formalized routines to help them perform "beyond their competence."
12. Learn certain tricks that help to keep conversations going.
13. Learn certain production strategies to fill in gaps in their own competence
14. Learn different styles of speech and writing and learn to vary their language according to the formality of the situation.

Age of Acquisition It has been generally observed that children from immigrant families achieve comparatively higher level of mastery of the new language than their parents do. Adult second language learners become capable of communicating successfully in the target language, there always be differences of accent, word choice or grammatical features that set them apart from the native-like speakers.

Despite the advantages and disadvantages of children and adult second language learners in learning capacity, learning rate and achievement, does **Critical Period Hypothesis (CPH)** exist in second language learning? Whether in second language acquisition, if the learners start learning a second language before puberty, they are more likely to acquire native like accents and proficiency? So far, most study results support the hypothesis that in terms of learning achievement and grammaticality the younger learners outperform the adults. However, one must bear in mind that the objective to learn a second language is not to achieve a native-like proficiency. Meanwhile, the opportunity for learning, motivation to learn, individual differences in aptitude for learning are also important determining factors in both the rate of learning and ultimate achievement in second language learning.

Personality A number of personality characteristics have been proposed as likely to affect second language learning, but it has been notoriously difficult to demonstrate the effects in empirical studies, it is largely due to the difficulty in identification and measurement. Despite the varied results produced by different studies, in terms of communicative ability rather than grammatical accuracy or knowledge of grammatical rules, the personality traits such as extroversion, talkative, self-esteem, self-confidence can be found in successful second language learners. Certain personality traits appear helpful in completing certain tasks in learning a second language. Therefore, the personality study may be better studied in combination with other factors such as task type, learning context, teacher or materials etc. that contribute to second language learning.

11.9 Second language acquisition and its pedagogical implications

All the research findings in second language acquisition have direct pedagogical implications. Second language acquisition as a scientific multi-disciplinary study has provided insights into how people learn a second language from human's internal mechanism and external factors which impose impacts to different extents. The

learning models and theories, different approaches to language learning, the role of input, the various forms of interaction which facilitate the conversion of input to intake and the personal factors etc. all suggest language teaching methodology in classroom second/foreign language instruction, language teaching research, materials construction, evaluation system, teacher training and teacher education, curriculum design and innovation, and also education management, to serve the ultimate purpose of improving second or foreign language teaching and learning efficiency.

Revision exercises:

1. To what extent is second language learning similar to first language learning? Can you list some proof from your own learning experiences?
2. Do you use Chinese in English learning and how? Try to observe yourself and pay attention to this, what conclusions can you reach about the role of Chinese in your English learning?
3. Identify the errors in the following sentences and trace the possible cause for each error.
 - a) Please do not hinder my work.
 - b) — Would you mind lending me your tape-recorder?
— Yes, certainly.
 - c) During the meeting we discussed about the research project.
 - d) Alison is in poor health. She is easy to catch cold.
 - e) The light can impress the film and in this way to fix the image of the film.
 - f) The scenery is too beautiful to describe it.
4. Based on your own experience, give at least three examples which are related to overgeneralization and performance errors.
5. What kind of a language learner you are? Have you ever thought of why and how you learn English?
6. List the learning strategies you use frequently, then compare that with the strategy list in 11.8 Learning strategies, what dis-

coveries you may find in organizing and managing your language learning?

7. Identify personality factors that may contribute to the success of learning a second/foreign language.

12 LANGUAGE AND BRAIN

12.1 Introduction

In the linguistic circle, researchers traditionally pay more attention to language system itself and less to the brain where language is represented and processed since the investigation of language presentation and processing in the brain is much more difficult than the study of language system. Recent decades, however, have witnessed a number of technological advances which have greatly facilitated the investigation of the human brain and language processing. More and more people are devoting themselves to the investigation. To help students to get the basics of these new areas, we will briefly introduce two sub-branches of linguistics, namely **neurolinguistics** and **psycholinguistics**.

12.2 Neurolinguistics

12.2.1 What is neurolinguistics?

Neurolinguistics is the study of the relationship between brain and language. It includes research into how the structure of the brain influences language learning, how and in which parts of the brain language is stored, and how damage to the brain affects the ability

to use language. Though neurolinguistics is still in its infancy, much has already been discovered about the above-mentioned aspects. This section provides a brief survey of brain structure and its function, the methods used in the study of the brain in terms of evidences for lateralization and the different types of language disturbance that result from brain damage.

12.2.2 The structure and function of the human brain

The brain, weighing about 1,400 grams, consists of about ten billion nerve cells called **neurons** and the billions of fibers that connect these neurons. The neurons are the basic information processing units of the nervous system. The brain is divided into two sections: the lower section called the **brain stem** and higher section called **cerebrum**. The brain stem, connecting to the spinal cord and shared by all animals, keeps the body alive by maintaining the essential functions such as respiration, heart rate, and muscle co-ordination. The cerebrum that differs in different species is not essential for life. The neurons form the surface of the brain, which is called the **cortex**. The cerebral cortex is the decision-making organ of the body and storehouse of "memory". It receives messages from all the sensory organs and initiates all voluntary actions. It is the cerebral cortex that accounts for the human distinctness in the animal world and it is within the human cortex that the secrets of language representation and processing are to be found. Animals, reptiles and amphibians, for example, have no cortex at all.

The cortex is separated by the **longitudinal fissure** into two parts: the left and right **cerebral hemispheres** (often referred to as the left brain and the right brain). The main connection between them is a bundle of nerve fibres known as the **corpus callosum**, a pathway leading one to another, allowing the two hemispheres to communicate with each other.

Each hemisphere of the human brain is responsible for different functions. An interesting fact about these two hemispheres is that each hemisphere controls the opposite half of the body in terms of muscle movement and sensation. That is, if you scratch

your nose with your right hand, it is the left hemisphere that has controlled the actions. If someone whispers into your left ear, the sound signal will go to the right hemisphere before crossing over the pathway to get to the left. With respect to higher cognitive functions, generally the left hemisphere seems to excel in analytic tasks such as arithmetic, whereas the right hemisphere excels in tasks which require an overall appreciation of complex patterns such as the recognition of familiar faces and melodies. Although the left and right hemispheres show distinct abilities and responsibilities, complex mental activities such as language do not always fall neatly into one hemisphere or the other but involve the coordinated functioning of both hemispheres.

For example, most right-handed individuals have language represented in the left hemisphere and are therefore said to be left lateralized for language. But not every aspect of language is represented in the left hemisphere of right-handers. Adults who have had their left cerebral hemispheres surgically removed lose most, but not all, of their linguistic competence, typically the ability to speak and process complex syntactic patterns but retain some language comprehension ability. Clearly, it must be the right hemisphere that is responsible for whatever language processing ability remains. The case with left-handers is even more complex. Few left-handers have language localization in the right hemisphere. Rather they tend to show significant language representation in both hemispheres. Thus left-handers are generally less lateralized for language.

12.2.3 Methods in the study of the brain and evidences for lateralization

There still exists a controversy about localization — whether different human abilities and behaviours are traceable to specific parts of the brain. Some believe that brain functions can be highly localized to specific parts of the brain, whereas others consider the brain to function as a unit. However, there is a consensus that there is some lateralization of function since many evidences have been provided

by different methods. In this part, we shall introduce some methods employed in the study of the brain and the evidences brought about by these methods for lateralization.

For its complexity and also ethical problems, to study the human brain is extremely difficult. The traditional and the only way to study the brain in the past was through **autopsy studies**. However, the information obtained through autopsy is of little use in treating the patient since an autopsy can only be carried out after a patient's death. Thus other techniques have been explored. With the mighty advances of science and technology, the recent decades have seen some special investigative techniques. These techniques can roughly be divided into two categories: the investigation of the brain itself and the examination of the behaviour associated with the brain. The former includes '**Sodium Amytal**' Test (SAT), **Computerized Axial Tomography** (CT scanning), **Positron Emission Tomography** (PET) and the latter includes **dichotic listening studies** and **split brain studies**. We shall introduce the techniques briefly below.

12.2.3.1 Autopsy studies

Autopsy studies have been and continue to be an important tool in the understanding of the brain. The technique is used to examine the brain after the patient's death in order to find the relationship between the area of brain damage and the type of disorder the patient displayed while alive. A famous example of this type of analysis was undertaken in 1860 by a nineteenth-century French neurologist Paul Broca. In 1860, he observed a patient who had been hospitalized for over twenty years in Paris almost completely unable to speak, but appeared to understand everything that was said to him. Towards the end of his life, the patient also developed a paralysis of the right arm and leg. Immediately after his death, Broca examined the brain. It showed severe damage (called a **lesion**) in the lower rear area of the left frontal lobe. Broca thus concluded that because the patient was unable to speak, this part of the frontal lobe must normally be responsible for speech production. Since that time, many other autopsy studies have supported Broca's conclusions. This lower rear portion of the left frontal lobe is now

called **Broca's area**.

12.2.3.2 Methods to study the brain

In SAT the patient is asked to count out aloud while sodium amytal is injected into an artery carrying blood to one side of the brain. If this is the hemisphere used in speech, the patient loses all track of his counting and experiences severe language difficulties for several minutes. If it is not, the patient can resume normal counting almost immediately after the injection. Though effective, the test is of risk.

CT scanning uses a narrow beam of X-ray to create brain images that take the form of a series of brain slices. That makes it possible for the researchers to look inside a living brain. It is very useful in identifying brain lesions and tumours, though the image that CT scanning provides is static.

PET, however, makes it possible to study the brain in action. It has been found that when subjects speak, much blood flows to the left hemisphere of the cortex and to Broca's area in particular. When subjects read, much blood flows to the occipital lobe, to the angular gyrus, and to other areas of the left hemisphere. These observations support the view that the left hemisphere is primarily responsible for language and that there are specific language areas within the left hemisphere.

12.2.3.3 Methods to examine the behaviour associated with the brain

Dichotic listening. Dichotic listening is a technique in which stimuli either linguistic or non-linguistic are presented through headphones to the left and right ears to determine the lateralization of various cognitive functions. In this test the subject wears headphones, and is played two different words or sounds simultaneously, one into each ear. Most subjects can report the word played to the right ear (which is directly linked to the left hemisphere) more accurately than the one played to the left ear (linked to the right hemisphere). If different tunes are played into each ear simultaneously, the subjects will identify the tune played into the left ear better

than that played into the right ear. This confirms the assumption that the left hemisphere is better at processing linguistic signals such as words, numbers, and Morse code, whereas the right hemisphere is better at melodies and environmental sounds such as bird songs. The phenomenon that the right ear shows an advantage for the perception of linguistic signals is known as the **right ear advantage (REA)**.

Split brain studies. As we mentioned earlier, the cerebral hemispheres are connected by the corpus callosum. If the corpus callosum is severed, the hemisphere cannot communicate with each other. The experiments that investigate the effects of surgically severing the corpus callosum on cognition are referred to as **split brain studies**. When the brain is split surgically, the information from the left side of the body is received only by the right side of the brain and vice versa. Experiments with human split brain patients showed that messages sent to the two sides of the brain resulted in different responses. It appears from the behaviour of split brain patients that although the right hemisphere does show some language understanding, it is mute. If an apple is put in the left hand of a split-brain human and his vision is cut off, he cannot describe the object. The right hemisphere, which receives information from the left hand, is able to distinguish the apple from other objects, but it can neither put this into words nor transfer the information across the severed corpus callosum to the left brain. If the apple is put in the right hand, the patient can easily describe it in words, because the right hand is directly connected to the left hemisphere, which is responsible for language.

12.2.4 Aphasia

Aphasia refers to a number of acquired language disorders due to the cerebral lesions caused by vascular problems, a tumour, an accident and so on. The study of aphasia is by far the most important tool in the investigation of language in the brain. By studying the aphasic symptoms, neurolinguists can identify the major compo-

nents of language in the brain. In general, the amount and type of aphasic disturbance that a patient will exhibit depends on how much the brain is damaged and where it is damaged. There are many different types of aphasia. In the following, we will describe some of the more important ones.

12.2.4.1 Broca's aphasia

As indicated in the section 12.2.3.1, Broca's area is responsible for the articulation of speech. Thus, damage to parts of the brain in front of the central sulcus will cause **non-fluent aphasia**. Patients who suffer from non-fluent aphasia show slow effortful speech production. The most severe form of non-fluent aphasia is **global aphasia**, suffering from which patients are completely mute. One of the most important less severe forms is **Broca's aphasia** which displays several characteristics. Phonologically, the speech of Broca's aphasics is very halting and lack of normal sentence intonation. That is to say, patients have great difficulty in accurately producing the needed phonemes to say a word. When they say, they say very slowly and have a lot of hesitations. Syntactically, Broca's aphasics produce **telegraphic speech**, i.e. they omit the functional words that we would be likely to omit when we write a telegram and besides, they tend to omit inflectional affixes such as *-ing*, and *-ed* in words such as *reading* and *worked*. They often show difficulty judging the grammaticality of sentences.

Most Broca's aphasics show writing disturbances that are comparable to their speaking deficits. In other words, a patient who cannot pronounce the word *spoon* will also not be able to write it correctly. In spontaneous writing, Broca's aphasics also tend to omit function words and inflectional affixes. The syndromes accompanying Broca's aphasia are called **acquired dyslexia**. The term *acquired* (here and also in **acquired dysgraphia**) indicates that the patient possessed normal reading and writing ability prior to brain damage and distinguishes the syndromes from developmental dyslexia, which deal with disturbances of reading and writing development in children.

12.2.4.2 Wernicke's aphasia

Damage to parts of the left cortex behind the central sulcus results in a type of aphasia called **fluent aphasia**. In sharp contrast to the non-fluent aphasics, fluent aphasics have no difficulty in producing the language. They can speak very fluently with normal pronunciation and intonation and correct word order but often with little semantic meaning. They often have great difficulty in comprehending a speech. The most important type of fluent aphasia is called **Wernicke's aphasia**, which is named after the German physiologist, Carl Wernicke, who discovered that a lesion in the temporal-parietal area of the brain resulted in the disorders. Unlike Broca's aphasics, Wernicke's aphasics are generally unaware of their deficit. Patients cannot express themselves because they cannot understand what they have just said and use that understanding in the planning of what to say next. Wernicke's aphasics also show reading and writing deficits comparable to their deficits in speaking and listening. The written production of Wernicke's aphasics is formally very good with correct spelling and handwriting, but like their speaking, makes little sense. Reading comprehension is also severely impaired in Wernicke's aphasia. Patients can see the letters and words, but cannot make any sense of them.

The discussion of Broca's aphasia and Wernicke's aphasia has demonstrated how normal language use is a marriage of content and form. In the case of non-fluent aphasia, form is compromised but the content of language remains relatively intact. In contrast, fluent aphasia is characterized by a rapid flow of form with little content.

12.2.4.3 Acquired dyslexia

Damage in and around the angular gyrus of the parietal lobe often causes the impairment of reading and writing ability, which is often referred to as **acquired dyslexia**. There are two types of acquired dyslexia: **phonological dyslexia** and **surface dyslexia**. **Phonological dyslexia** is a type of acquired dyslexia in which the patient seems to have lost the ability to use spelling-to-sound rules. Patients suffer-

ing from phonological dyslexia can only read words that they have seen before. When asked to read an unknown word, they will either say nothing or produce a known word which is similar to the word they are asked to read. **Surface dyslexia** is the opposite of phonological dyslexia. Patients suffering from surface dyslexia seem unable to recognize words as wholes but must process all words through a set of spelling-to-sound rules. They do not have any problem in reading the regularly spelled words such as *hat*. If asked to read irregularly spelled words, they will apply regular rules and produce the incorrect form and assign it a meaning that is appropriate to their incorrect pronunciation. For example, if the patient read the word *sweat* as /swi:t/, when asked what the word means, they would answer: the opposite of bitter.

12.3 Psycholinguistics

12.3.1 What is psycholinguistics?

Psycholinguistics is the study of language processing. It is concerned with the processes of language comprehension and production. Psycholinguists seek to discover the nature of the mental representations that serve the functions of language comprehension and production and the nature of the cognitive operations and computations that are employed when we understand and produce language. In this section we are going to introduce some methods employed by psycholinguists to probe language representation and processing in the mind, the correspondence of theoretical linguistics and language processing, and Levelt's model of language production.

12.3.2 Psycholinguistic research methods

12.3.2.1 Field work

Since language processing does not involve observable physical events, but rather involves mental computations and representa-

tions that cannot be observed and measured directly, psycholinguists have to *infer* from the observable behaviour. Thus the scientific analysis of such behaviour as slip of tongue becomes one of the earliest and most influential ways to study language processing. One kind of humorous slips of tongue called **Spoonerisms**, was named after the Victorian cleric and teacher, William A. Spooner, who was infamous for blundering through many lectures or sermons with humorous speech errors such as below.

(12-1) What he intended: *You have wasted the whole term.*

(12-2) What he said: *You have tasted the whole worm.*

Victoria Fromkin and others studied such errors and other spontaneous slips of tongue and found that these types of errors occur with a number of linguistic units. In some cases, a single phoneme is added, deleted or moved, but at other times it may be a sequence of phonemes, morphemic affixes and roots, whole words, or even phrases. As a general rule, errors tend to occur at only one linguistic level per utterance. That is, when a person clearly says the wrong word, the sentence is syntactically, prosodically, and phonologically intact. All these slips of tongue provide evidence that a sentence must be planned before it is produced. They also provide evidence that the morpheme, rather than the word, is the fundamental building block of English sentence production. The most common explanation for these is that we produce speech through a series of separate stages, each devoted to a single level of linguistic analysis.

12.3.2.2 Experimental methods

Since slips of tongue are naturally occurring events, researchers have no control over when and where they will happen and have simply to wait for them. Thus, researchers have to devise special experimental methods by which they can control the circumstances in which language is processed. These methods include **lexical decision** and **priming** that are used to study how words are organized, assessed and represented in the mind, and **timed-reading experiment**

and **eye movement experiment** that are used to study how sentences are processed.

Lexical Decision. Lexical decision task is a kind of experiments psycholinguists employ to investigate lexical access. In this task, a participant sees a string of letters and is required to decide whether the string is a word or not. The stimuli in this kind of task are presented one at a time. When the stimulus is presented, the participants must judge as quickly as possible whether it is a word or non-word either by saying "yes" or "no" or press the button labelled "yes" or "no" if doing it with a computer. The time the participant takes in judging a list of words and nonwords is recorded. There are two dependent variables: the time a subject takes to respond and whether or not the subject's judgement is correct. Therefore, the lexical decision task can be used to measure the speed and accuracy with which words in the mental lexicon are accessed.

Researchers have obtained the following findings. Firstly, subjects take less time (half a second) to make judgement on frequently used words than to judge (three-quarters of a second) less common words. This finding has been called the **frequency effect**. Secondly, subjects take longer time to respond to the pronounceable non-words than unpronounceable non-words. It seems that the subjects take the phonotactic constraints of the language into account. Thirdly, non-words that sound like real words take longer to reject than stimuli that are non-words both visually and phonologically. Again this tells us that aspects of phonology are automatically activated during word reading.

The priming experiment. The priming experiment involves the same procedure as the lexical decision task except that the word to be judged (called the **target**) is preceded by another stimulus (called **prime**), a semantically related word. What is measured in the priming experiment is the extent to which the prime influences the subject's lexical decision performance on the target stimulus. Priming tasks usually consist of two stages. In the first stage, the prime is presented, to which no response is usually required or recorded. In the second stage, the target is presented, to which the participant is required to give some response (e.g. by naming the word or

deciding whether the string is a word) and the time taken to make this response is recorded. The times to respond to the target in the priming condition are then compared with a condition in which no priming stimulus or a different priming stimulus was presented.

Research has shown that the time needed to classify the target *butter* as a word varies with the prime. Times are shorter when the prime is a semantically related word *bread* than when it is an unrelated word *nurse*. Results of this sort lead us to the view that words are related in the mind in terms of networks. Based on the evidence from these priming experiments, psycholinguists reason that when a word such as *bread* is presented, its image is activated in the mind and the activation spreads to other words in the lexical network that are semantically related. Since the mental representation for *bread* has already been activated through the prime, when the target is presented, response time is shorter than it otherwise would have been. This is called the **priming effect**.

Timed-reading experiments. A timed-reading experiment is a technique that is used to study the determinants of sentence-processing difficulty. The underlying assumption of the experiment is that the more difficult sentence processing is, the longer it should take. One of the commonly used timed-reading experimental methods is the bar-pressing paradigm in which subjects are seated in front of a computer screen and read a sentence one word at a time in the middle of the screen. When the subject processes the word, he or she presses a bar on the keyboard. The word disappears and the next word of the sentence appears in its place. This process continues until the subject has read all the words in the sentence. The dependent variable in these experiments is the amount of time it takes subjects to press the bar after seeing a particular word.

Research has shown that subjects do not show equal bar-pressing times across a sentence. They show longer bar-pressing times for processing most nouns and verbs and relatively less time for function words such as determiners, conjunctions and prepositions and the longest bar-pressing time at the end of the clause boundary since extra time is required to integrate preceding infor-

mation into a complete clause structure.

Eye movement experiments. The eye movement experiment is another method used to study sentence processing. Modern technology has made tremendous advances recently in examining eye movements during the reading process, and now the details of eye movements in sentence reading can be studied with sophisticated laboratory procedures. The exact point on the printed page at which a person's eye fixates can be determined through eye-monitoring equipment.

This technique has revealed that fixation times are typically longer for less frequent words, and the points of fixation are typically centred on content words such as nouns and verbs rather than on function words such as determiners and conjunctions. Difficult sentence structures create longer fixation time as well as many more regressive saccades. Thus fixation duration is one index of the difficulty of information processing during reading.

Event-related potential experiment. Another way to investigate language processing is to study the event-related potentials (ERPs) produced by the brain during language processing. ERP experiments measure electrical activity in the brain. In the ERP experiments, the subject simply sits in front of a computer screen and reads like in normal language-processing situations. Electrodes are placed on a subject's scalp and recordings are made of voltage fluctuations resulting from the brain's electrical activity. ERP uses a computer to calculate what part of the electrical brain activity is related to words or sentences on a screen.

ERP experiments have shown that sentence processing is immediate and online. When reading a sentence we do not wait until the entire string is complete, but rather constantly building interpretations of the sentence as it unfolds. Whenever what is presented to us contradicts our expectations based on our ongoing interpretative processes, a negative voltage is observed.

12.3.3 Linguistics and language processing

In everyday life, utterances unfold in a swift and linear fashion. That is, phonemes come to your mind in rapid sequence. As soon as the segments of a word are identified, you have accessed the representation for the word in your mental lexicon. When the next segment comes up in sound stream, you know that it is the beginning of a new word. You can most probably know the part of speech of the word. And based on this and the coming stimuli, you can disambiguate a polysemous word or a homonym. Thus, when a person hears a sentence, he performs phonetic analysis to isolate phonemes and word boundaries, and to relate these to representations in the mental lexicon. This inductive analysis is referred to as **bottom-up processing**. But we do not wait until we have analysed all the phonemes in a sentence before we begin to try to understand it. Rather, we begin interpretation of a sentence spontaneously and automatically on the basis of whatever information is available to us. This is called **top-down processing**. Thus language processing involves a constant interplay between bottom-up and top-down processing. We process phonetic features, phonemes, and syllables all at the same time. We construct syllable representations, morphological representations, and syntactic representations in a spontaneous and automatic manner.

Psycholinguistic studies have revealed that many of the concepts and principles employed in the analysis of sound structure, word structure, and sentence structure also play a role in language processing. In the following, we will show how these concepts and principles are used in language processing.

12.3.3.1 Phonetics and phonology

The study of slips of tongue has shown that errors people make in spontaneous speech often involve a phonological feature such as voicing. For example, people sometimes say "pig" instead of "pick".

Phonemes also play a role in language processing. The study of

Spoonerisms offers evidence that entire phonemes are misplaced during sentence planning. The phonemic unit of representation also plays a central role in psycholinguistic models of speech processing, such as **cohort model**, which states that, in word comprehension, words are analysed by hearers from beginning to end. The beginning-to-end analysis proceeds one phoneme at a time rather than one syllable at a time. Spoken word recognition occurs in three stages. First, on the basis of an acoustic-phonetic analysis of the input, a set of lexical candidates is activated. For example, upon hearing "*Angel lost her ba ...*", *bag*, *bat*, *bath*, *bass*, and many others would be available for selection. Second, one member of the cohort is selected for further analysis. The selection stage is sensitive to multiple sources of information, including the phonetic input, word variables (such as word frequency), and the ongoing discourse. Finally, the selected lexical item is integrated into the ongoing semantic and syntactic context.

Other evidence shows that the syllable plays an important role in speech perception. In one study, subjects were presented with disyllabic words and disyllable non-words and asked to press a button if a particular target unit was in the stimulus. The target units were either syllables or segments. It was found both for words and nonwords that subjects were significantly faster at identifying syllable targets than at identifying single segment targets. It was concluded that syllable identification was faster because, in normal auditory analysis, subjects first break down stimuli into syllables and then into individual segments as the situation demands.

12.3.3.2 Morphological processing

Psycholinguistic research has revealed that morphological structures and principles play a substantial role in the representation of words in the mind and in word recognition. For most multimorphemic words, individual morphemes are automatically activated during word recognition. Priming experiments show that when a subject is exposed to a multimorphemic word such as *boyish*, the activation of that word in the mind automatically activates the lexical entry for its root *boy*, which results in its showing a faster re-

sponse time as the target in a lexical decision task. They also show that the presentation of a compound such as *crowbar* will produce a priming effect for the subsequent lexical decision time for a word such as *bird*. For this priming effect to take place, the morpheme *crow* would have to be individually activated during word recognition because, as a whole, the compound *crowbar* has nothing to do with *birds*.

Selectional restrictions. Research shows that knowledge of the selectional restrictions of affixes does indeed form part of the word-processing system. For example, in a recent experiment in morphological processing, subjects were presented with nonsense roots that had prefixes and suffixes attached to them. Some words were morphologically legal while others were illegal. It was found that response times were significantly longer for illegal nonsense words than for the morphologically legal words.

Hierarchical structure. Priming experiments have been used to investigate whether the representation of multimorphemic words in the mind includes a representation of hierarchical structure. They use lexical decision response times as the dependent variable. In the experiments, stimuli such as *refillable*, in which *fillable* is not a real morphological constituent, are compared to stimuli such as *unbearable*, in which *bearable* is a real morphological constituent. Subjects were first shown the right substrings such as *fillable*, and then the full trimorphemic word, such as *re-fill-able*. Priming effects were measured in terms of the lexical decision response times for the full word. It was found that those substrings that were real morphological constituents produced a significantly larger priming effect than those that were not. The result shows that our representation of complex words is organized in terms of hierarchical morphological structure.

12.3.3.3 Syntax

Psycholinguistic research has found that the number of transformations in a sentence did not predict processing time. Therefore, psycholinguists conclude that the system rules employed by linguists to describe sentence structure are different from those used in sen-

tence production and comprehension

Thus, it was necessary to postulate a special module for sentence processing and another for grammatical knowledge. The processing module is called the **syntactic parser**. This parser is understood to be the system that makes use of grammatical knowledge but also contains special procedures and principles that guide the order in which elements of a sentence are processed and the manner in which syntactic structure is built up. Here the term **module** has a special meaning. It refers to a unit of processing that is relatively autonomous from other processing units. Psycholinguistic studies have investigated whether syntactic parsing operates in an automatic and obligatory manner that is relatively independent of the activity of other processing systems. Two sources of evidence have been very important in the exploration of the principles of modularity of sentence processing. They are **garden path sentences** and **sentence ambiguity**.

Garden path sentences. A garden path sentence is an awkward sentence that misleads the syntactic parser and takes it down the garden path to the wrong analysis. One of the most famous examples of garden path sentence is as below:

(12-3) The horse raced past the barn fell.

As we read the sentence, we build up a syntactic structure in which *The horse* is the subject and *raced past the barn* is the main VP of the sentence. When we get to the word *fell*, we are surprised to find there is no room for an extra VP in the sentence we have built. Thus we are forced to "backtrack" and reinterpret the sentence. The correct interpretation of the sentence is that *fell* is the main VP while *raced past the barn* is a clause modifying the NP *The horse*. The ways in which native speakers misunderstand garden path sentences seem to reveal that we construct syntactic representations from the beginning of the sentences to the end and that our sentence parsers are organized so that we make a number of assumptions about how a sentence will proceed. It is found in eye-movement studies that subjects show more regressive saccades and

longer fixation times for garden path sentences.

It has been claimed that the garden path effect results from two principles of parsing. They are **minimal attachment** and **late closure**. Minimal attachment strategy states that we prefer attaching new items into the phrase marker being constructed using the fewest syntactic nodes consistent with the rules of the language. For example, a sentence fragment such as *Ernie kissed Marcie and her sister ...* could be interpreted as either a noun phrase conjunction (that is, both *Marcie* and *her sister* were recipients of a kiss) or as the beginning of a new noun phrase. According to minimal attachment, we prefer the former interpretation. Late closure strategy states that, wherever possible, we prefer to attach new items to the current constituent. A primary motivation for this strategy is that it reduces the burden on working memory during parsing. For example,

- (12-4) Tom said that Bill had taken the cleaning out yesterday.

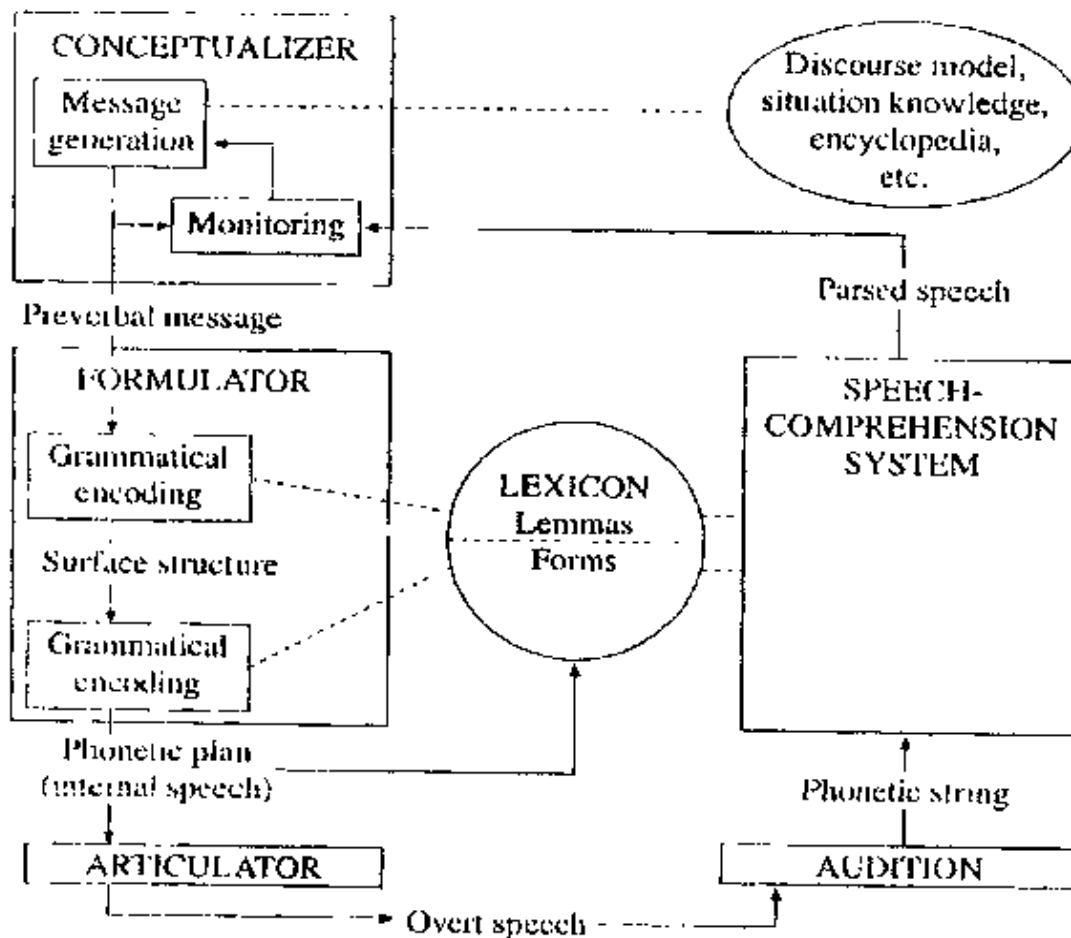
Here the adverb *yesterday* may be attached to the main clause (*Tom said ...*) or the subsequent subordinate clause (*Bill had taken ...*). But we prefer to attach the adverb to the subordinate clause.

Sentence ambiguity. The study of sentence ambiguity has also contributed to how syntactic processing is accomplished. For example, the word *rose* in *They all rose* is ambiguous. It can be related either to stand or to flower. To see whether or not only one meaning is activated, researchers use a lexical decision experiment in which *They all rose* is used as the prime. After seeing the sentence, subjects were presented with either the word *flower* or *stand*. Researchers found that the sentence facilitated lexical decision response times to both words, that is, both meanings of the word in the sentence were activated. Results show that in processing a sentence, we create all representations possible and then discard the ones that are either incorrect or unnecessary.

12.3.4 Psycholinguistic modeling

So far we have discussed how words and sentences are represented in the brain and accessed in language processing. Now we are going to present the most influential psycholinguistic model of speech production proposed by Levelt, as shown below.

Figure 12–1 Levelt's model of speech production.



The model contains boxes that stand for constellations of activities. These boxes are given creative names to give an indication of the action they perform. They are connected by arrows that indicate what takes place first, second, and so on. Finally the boxes are arranged in space so as to show what activities may take place simultaneously. Following Levelt (1989), we may distinguish four stages of production: conceptualizing, formulating, articulating, and self-monitoring. First, we must conceptualize what we wish to communicate. Second, we formulate this thought into linguistic

plan in the Formulator. It contains grammatical and phonological process and draws upon the lexicon. Third, the information is passed to the Articulator from Formulator which actually produces the utterance. In other words, we execute the plan through the muscles in the speech system. Finally, we monitor our speech, to assess whether it is what we intended to say and how we intended to say it. That is to say, the information does not flow in one direction only. There is feedback so that while producing language, a speaker monitors through the comprehension system whether the utterance makes sense.

Revision exercises:

1. What distinguishes the human brain from a non-human brain?
2. Describe the major symptoms of Broca's aphasia, Wernicke's aphasia, and acquired dyslexia.
3. What are the relative advantages and disadvantages of the techniques used to investigate the brain in terms of ethics, cost, intrusiveness and type of information yielded.
4. What experiments would you devise to address the following questions?
 - a) Are semantically abstract words easier to process than semantically concrete ones?
 - b) Are simple sentences easier to understand than complex ones?
 - c) Do people read words from beginning to end?
5. Describe Levelt's speech production model in your own words.

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GLOSSARY

- acculturation 同化过程
acoustic phonetics 声学语音学
acquired dysgraphia 习得性书写障碍
acquired dyslexia 习得性失读症
acquisition 习得
acronym 词首字母缩略词
add; addition 添加
addresser 发话人
addressee 受话人
adjacency 相邻;相连
affix 词缀
affricates 塞擦音
agent 施事,施事者
agreement rule 一致关系规则
allophone 音位变体
alveolar 齿龈音
antonymy 反义现象
antonym 反义词
aphasia 失语症
applied linguistics 应用语言学
arbitrariness 任意性
argument 变元
articulatory phonetics 发音语音学
articulatory variables 发音变项
aspiration 送气
assimilation rule 同化规则
auditory phonetics 听觉语音学
back-formation 逆构词法
back vowel 后元音
base 基础
behaviorism 行为主义
behaviorist 行为主义者
bilabial 双唇音
bilingualism 双语现象
binary cuttings 二分(直接成分分析)
blending 紧缩法
borrowing 借用
bottom-up processing 自下而上加工,自下而上处理
brain stem 脑干
Broca's aphasia 布罗卡失语症;布洛卡失语症
Broca's area 布罗卡区;布洛卡区
bound morpheme 粘着语素
broad transcription 宽式标音
caretaker talk 保姆式语言
case 格
case grammar 格语法
category 范畴
causative verb 使役动词
central vowel 中元音
cerebrum 大脑
cerebral hemisphere 大脑半球
channel 渠道
classical language 古典语言
clipped word 缩略词
closed class word 封闭词类
code 代码
cognitive strategies 认知策略
cohort model 交股模型
co-hyponyms 并列下一次
coinage 创新词
colour word 色彩词
commissives 承诺类
communicative competence 交际能力

- competence 语言能力
 complement 补语, 补足语, 补足成分
 complement clause 补语从句
 complement phrase 补语短语
 complementizer 补语化成分
 complementarity 互补性反义现象
 complementary distribution 互补分布
 complex symbol 复杂符号
 componential analysis 成分分析
 components of meaning 意义分析
 compound words 复合词
 comprehensible input 可理解的语言输入
 Computerized Axial Tomography (CT scanning or CAT) 计算机化轴向层面 X 射线摄影法
 concept 概念
 connotative 暗涵的
 consonant 辅音
 constatives 述事话语
 constituent (结构)成分
 constituent structure 成分结构
 constraints 制约
 construction 结构
 content word 实词
 context 语境; 上下文
 contradiction 自相矛盾的说法
 Contrastive Analysis 对比分析
 conversational implicature 会话含义
 co-operative principle 合作原则
 coordinating endocentric construction 并列向心结构
 coordinate structure 并列结构
 coordination 并列, 并列关系
 coordination rule 并列规则
 copy 复写
 cortex 脑皮层
 corpus (语言)素材
 corpus callosum 胼胝体
 creativity 创造性
 creole 克里奥耳语; 混合语
 Critical Period Hypothesis 临届期假说
 cross-association 互相联想
 cultural difference 文化差异
 cultural diffusion 文化扩散
 cultural imperialism 文化中的帝国主义
 cultural overlap 文化重叠
 cultural transmission 文化传递
 declarations 宣告类
 deep structure (D-structure) 深层结构
 delete; deletion 省略
 deletion rule 省略规则
 denotative 指示意义的
 dental 齿音
 derivational morpheme 派生语素
 descriptive adequacy 描写合适性
 descriptive linguistics 描写语言学
 design features 识别特征
 determiner 限定词; 限定成分
 diachronic linguistics 历时语言学
 dialect 方言
 dialectal synonym 方言同义词
 dichotic listening study 双耳分听试验
 diglossia 双语, 双言制
 diphthong 复合元音
 directives 指令类
 discontinuous constituent 非连续成分
 discourse accents 话语口音
 discourse community 话语社区
 discovering procedures 发现程序
 displacement 不受时空限制的特征
 distinctive features 区别性的特征
 distribution 分布
 double articulation 双重陈述

- downgraded predication 降格述谓结构
 duality of structure (or double articulation) 结构二重性
 dysgraphia 书写困难症
 dyslexia 失读症
 emotive meaning 表情意义
 endocentric construction 向心结构; 内心结构
 entailment 含义
 Error Analysis 错误分析
 entity 实体
 evaluative meaning 评价意义
 events 活动; 事件
 event-related potential experiment (ERP experiment) 事件相关电位试验
 exocentric construction 离心结构; 外向结构
 expansion 扩展
 expressives 表达类
 Extended Standard Theory 扩充式标准理论
 eye movement experiment 眼动试验
 factive predicate 叙实性谓次
 feature symbol 特征标记
 features of meaning 意义特征
 field work 实地调查, 现场调查
 fluent aphasia 流利性失语症
 form class 形式类
 formalize 形式化
 fossilization 语言石化(现象)
 framework 框架
 free morpheme 自由语素
 frequency effect 词频效应
 fricative 擦音
 front vowel 前元音
 function word 虚词
 functional shift 功能性变化
 functor element 起功能作用成分
 garden path sentence 花园小径句
 gender 性别
 Generative Semantics 生成语义学
 glide 音渡
 global aphasia 整体性失语症; 完全性失语症
 glottal 喉音
 glottis 声门
 gradable opposites 可分等级的反义词
 grammatical features 语法特征
 grammaticality 语法性
 grammatical meaning 语法意义
 hard palate 硬腭
 head 中心语, 中心成分
 head movement 中心语移位
 hearing impairment 听力受损
 hierarchy 等级体系
 historical linguistics 历史语言学
 homography (词的)同形
 homonymy 同音异义
 homophony 同音
 hyponymy 下义关系
 hyponym 下义词
 iconic 图像的
 idiolect 个人语言
 illocutionary act 言外行为
 illocutionary point 言外之的
 immediate constituent 直接成分
 Immediate Constituent Analysis (IC Analysis) 直接成分分析
 Incompatibility 反义词
 Inconsistency 自相矛盾
 infinitive marker 不定式标记
 inflection 屈折变化
 inflectional morpheme 屈折语素
 innatist 语法天生主义者
 intake 纳入
 interactionist 互动主义者
 interference 干涉; 干扰

- interlanguage 中介语
 interlingual (errors) 语际错误;受母
 语影响的错误
 International Phonetic Alphabet 国
 际音标
 interpretive Semantics 解释语义学
 intonation 语调
 intralingual (errors) 语内错误
 intuition 知觉;语感
 inversion 倒置;倒装词序
 logical problem 逻辑问题
 kinship terms 亲属关系词项
 labelled (unlabelled) tree diagram
 加标记(不加标记)的树形图
 labial 唇音
 language acquisition 语言习得
 language acquisition device 语言习
 得机制
 language aptitude 语言能力(倾向)
 language behaviour 语言行为
 language transfer 语言迁移
 langue 语言;语言系统
 larynx 喉
 late closure 后封闭,晚封闭
 learning 学习
 learning strategies 学习策略
 lesion 毁损,病变
 level 层
 level of language 语言层次
 lexical structure 词汇结构
 lexicon 词汇;
 lexical decision 词汇判断;词汇确定
 法
 linear 线性的
 linguistic imperialism 语言学中的帝
 国主义
 linguistic nationalism 语言学中的民
 族主义
 linguistic relativity 语言相对性
 linguistic repertoire (使用者)掌握的
 全部语言变体
 linguistics 语言学
 liquid 流音
 loan word 借词;外来词
 locutionary act 言内行为
 longitudinal fissure 纵裂
 loss of words 词项的废弃
 manner of articulation 发音方法
 machine translation 机器翻译
 major lexical category 主要词汇范畴
 matrix clause 主句
 maxim of manner 方式准则
 maxim of quality 质量准则
 maxim of quantity 数量准则
 maxim of relation 关联准则
 meaning 意义
 meaningfulness 有意义
 meaning relation 意义关系
 mentalism 心理主义;心灵主义
 mentalistic theory 精神论
 mental retardation
 message 信息
 metacognitive strategies 元认知策略
 Middle English 中世纪英语
 minimal attachment 起码连接;最低
 限度结合
 minimal pair 最小对立体
 minor lexical category 次要词汇范
 畴
 Modern English 现代英语
 modifier 修饰成分,修饰语
 modifying predication 修饰行述谓结
 构
 module 模块,组块
 monophthongs 单元音的
 morpheme 词素
 morphological rule 词素音位规则
 morphology 形态学
 motherese 保姆式语言
 motivation 动机

- move α 移取 α
 naming theory 命名论
 narrow transcription 严式标音
 narrowing of meaning 词义缩小
 nasal cavity 鼻腔
 nasality 鼻音化
 neurolinguistics 神经语言学
 neuron 神经细胞, 神经元
 no-place predication 空位述谓结构
 non-fluent aphasia 非流利失语症; 非流畅性失语症
 observational adequacy 观察适合性
 Old English 古代英语
 one-place predication 一位述谓结构
 open class word 开放性词类
 oral cavity 口腔
 over-extension 扩展过头
 overgeneralization 概括过头
 palatal 腭音
 paralinguistic 伴随语言学的
 parole 话语
 patient 受事, 受事者
 performance 语言运用; 言语行为
 performance analysis 言语行为分析
 performance error 言语行为错误
 performatives 行事话语
 perlocutionary act 言后行为
 pharyngeal cavity 咽腔
 phone 音素
 phonological dyslexia 拼音性失读症
 phoneme 音位
 phonemic contrast 音位对立
 phonetic features 语音特征
 phonetics 语音学
 phonological component 音位成分
 phonological rules 音位规则
 phonology 音位学
 phrase structure rules (PS-rules) 短语结构规则
 pidgin 洋泾浜语
 pidgin English 不纯粹的英语
 place of articulation 发音部位
 plosive 破裂音
 politeness principle 礼貌原则
 polysemy 多义性; 多义现象
 Positron Emission Tomography (PET) 计算机辅助正电子发射断层扫描技术; 正电子发射 X 射线层析照相术
 positive transfer 积极迁移; 正面迁移
 postvocalic 元音后的
 pragmatics 语用学
 predicate 谓词
 predication 述谓结构
 predication analysis 述谓结构分析
 prefix 前缀
 prescriptive (grammar) 规定(语法)
 presupposition 前提
 prime 启动词
 priming 启动
 priming effect 启动效应
 process of simplification 简化过程
 projection rule 投射规则
 proposition 命题
 propositional content 命题内容
 psycholinguistics 心理语言学
 qualifier 限定语, 修饰语
 qualifying predication 修饰性述谓结构
 Received Pronunciation 标准发音
 reference (所指) 语义
 regional dialect 地域方言
 register 语域
 relational opposites 关系反义词
 reorder 重排
 representation 表达; 呈现
 representatives 阐述类
 response 反应
 Revised Extended Standard Theory 修正的扩充式标准理论

- rewrite rules 重写规则
 right ear advantage (REA) 右耳优势,右耳听力强
 rounded vowel 圆唇元音
 second language acquisition 第二语言习得
 segment 切分成分
 segmentation 切分
 selectional restriction 选择限制
 semantic anomaly 语义异体
 semantic component 语义成分
 semantic deviations 语义变题
 semantics 语义学
 semantic structure 语义结构
 semantic triangle 语义三角
 semi-close vowels 半闭元音
 semi-open vowels 半开元音
 sense 意义
 sentence ambiguity 句子歧义
 sequential rules 序列规则
 setting 背景;环境
 sibilant 咝音
 socialization 社会化
 sociolect 社会方言
 sociolinguistics 社会语言学
 Sodium Amytal Test (SAT) 阿米妥纳试验
 specifier 标志语,标志成分
 speech act theory 言语行为理论
 soft palate 软腭
 spectrograph 频谱仪
 speech act 言语行为
 speech community 言语社团
 speech variety 言语变体
 split brain study 裂脑试验
 spoonerism 斯本内现象,首音互换
 standard English 标准英语
 stimulus 刺激
 stop 塞音
 stress 重音
 structural analysis 结构分析
 structural change 结构变化
 structural linguistics 结构主义语言学
 stuttering 口吃
 subcategorization 次范畴化
 surface dyslexia 浅层诵读困难
 surface structure (S-structure) 表层结构
 subordinate predication 主从述谓性结构
 subordinating endocentric construction 从述性内向结构
 subcategorization 次范畴化
 suffix 后缀
 superordinate 上坐标词
 suprasegmental features 超切分特征
 surface structure 表层结构
 stemming 词缀剥离法
 syntactic category 句法范畴
 syntactic parser 句法处理器
 synchronic linguistics 共时语言学
 synonymy 同义词;同义现象
 syntactic ambiguity 句法歧义
 syntactic component 句子成分
 syntax 句法
 taboo words 禁忌词
 target 目标词
 telegraphic speech 电文式言语,电报式言语
 tautology 同义反复
 teeth ridge 齿龈隆骨
 telegraphic speech 电文言语
 terms of address 称谓词
 tense and aspect 时和体
 the Standard Theory 标准理论
 timed-reading experiment 限时阅读试验
 tone 音调;声调
 tone language 声调语言

top-down processing 从上至下处理,
从上至下加工

topic 话题;主体

trace 语迹

transformation 转换

transformational-generative grammar
(TG grammar) 转换生成语法

transformational rule 转换规则

tree diagram 树形图

two-place predication 双位述谓结构

ultimate constituent 最终成分

unaspirated 不送气的

Universal Grammar 普遍语法

utterance 话语

utterance meaning 话语意义

uvula 小舌

validity 有效性

variable 变项

velar 软腭音

velum 软腭

vocal cords 声带

voiceless 不带音的;轻声的

voicing 带音化;浊音化

vowel 元音

widening of meaning 词义扩大

Wernicke's aphasia 韦尼克失语症;
威尔尼克失语症

wh movement wh 移位

wh question wh 疑问句,特殊疑问句

X⁻ Theory X 标杆理论

